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**University of Arkansas
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The Challenge of Automated Systems in Archeology

By W. Fredrick Limp

For the past few decades computer based systems, databases, geographic information systems, and the like have become increasingly important in carrying out archeological research and management activities. With some important exceptions, such systems have been used mostly to automate previously manual tasks such as records keeping and to conduct statistical analyses that would not have been

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**National Park Service
Archeological Assistance Division**

NADB - The National Archeological Database

By Veletta Canouts

The development of the National Archeological Database (NADB) is an important strategy in effecting the exchange of archeological information. Originally designed as three modules—a Reports portion, a Projects portion, and Other Databases—the way that NADB has evolved suggests that it should be viewed as an umbrella or, more appropriately, a national directory of archeological information.

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Introducing Cultural Resources Databases

The use of databases to manage and share collected information is becoming increasingly prevalent in archeology. Articles appearing in this issue of the Federal Archeology Report introduce several examples of multiuser databases that collect data for use on the local, state, regional, and national/international levels.

Although archeologists routinely use computerized algorithms to process large amounts of data, designing, structuring, and linking databases to store and retrieve data long after a particular processing event has occurred are relatively new enterprises. When they are successful, the resulting databases add to the field of knowledge that is presently contained in books, journals, and written records. Successful databases also present new ways of interacting with the data: that is, data can be organized in a nonlinear fashion, queried dynami-

cally, and the results used in a variety of graphical presentations and analytical applications.

Improving the exchange of archeological information is an important goal, recognized in the "National Strategy for Federal Archeology" issued by the Secretary of the Interior in 1991 (Federal Archeology Report June 1990; SAA Bulletin 10(2): 10, 15). Improving information exchange means not only taking advantage of advancing computer technologies but identifying significant data sets and appropriate data structures for their storage and retrieval. It also means building the organizational infrastructure required to assure data quality and long-term maintenance of the database management systems.

By Veletta Canouts and W. Fredrick Limp



U.S. Department of the Interior * National Park Service * Cultural Resources
Departmental Consulting Archeologist * Archeological Assistance

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Continental Scale Archeology Studies Using GIS

By W. Fredrick Limp and Anne Gisiger

The development of Geographic Information System (GIS) technologies has provided archeologists with a new suite of powerful tools for investigating the archeological record. The Center for Advanced Spatial Technologies (CAST) is interested in issues related to large scale site distributions using these systems to better understand spatial relationships in the archeological record. Working with the Legacy Resource Management Program of the Department of Defense (DOD), the National Park Service (NPS) Departmental Consulting Archaeologist/Archeological Assistance Division, the NPS Interagency Resources Division, the State Historic Preservation Officers (SHPOs), and staff at other data repositories, CAST is now in the process of acquiring data on site distributions for the entire continental United States.

The data from the SHPOs and data repositories are being collected at the county level. To date, 33 States have responded to requests for information, and Figure 1 shows the distribution of 627,000 archeological sites located in 2,200 counties. The raw site totals have been standardized to sites per square mile to correct for county size. The data have been entered into a relational database that can be queried in text or spatial formats. As resources permit, other economic and social data from standard sources such as the Census will be entered.

Some of these datasets are already available for one portion of the United States. They were assembled for an archeological overview of the south-central United States, which was sponsored by the Southwestern Division of the U.S. Army Corps of Engineers (COE). Site densities were mapped relative to demographic trends over the last 40 years in order to identify, on a macro scale, those areas where development was likely to cause increased destruction of archeological properties. With the addition of the overview of the northern plains states, sponsored by the DOD Legacy Program, there will be comparable data for approximately one-third of the United States, from the Mississippi River/Great Lakes

to the Continental Divide. These datasets will include bioarcheological resources, as well as site densities.

Even though the datasets are by no means complete, there are already a number of interesting patterns appearing in the site distributions. Different site densities are a function of a number of causes, most obviously the intensity of archeological survey; but they also reflect, to some degree, actual site densities, the nature of survey methodologies, and the site vegetation cover. While such data should be used with caution, this distributional information, at least, presents national policy makers with important perspectives on regional differences. The distributions also offer important insights into the underlying structures of basic archeological data.

In a collateral effort, CAST is working with the staff of the National Register of Historic Places to integrate the National Register site datasets with the above datasets in order to assess the spatial relationships between the National Register as a "sample" of the nation's important sites and the number of sites already identified by the States and other data repositories. Where the data are provided by the SHPOs, separate counts are recorded for prehistoric and historic archeological sites. Currently the ratio of historic to prehistoric archeological sites has been around 1 to 3. Data from the National Register's automated system is being downloaded into the database to facilitate comparison between the two datasets. The system permits queries to the database to be displayed in a spatial format, as well as spatial queries to be formulated by pointing to a location on the map.

Site distribution data are also being compared with the distribution of archeological reports in the reports portion of the National Archeological Database - NADB-Reports (See article by Canouts, this issue). There are approximately 100,000 archeological reports reported nationally. In addition to normal accessibility through text based searches using the NADB Online System, national maps can be produced which plot county-based site density maps for selected search criteria using the software tools developed by James Farley at CAST. For example a map can be produced that shows the number (or density as a standardized measure) of reports pertaining to Paleoindian (see Figure 2). Whereas the site maps provide insight into regional differences in site distribu-

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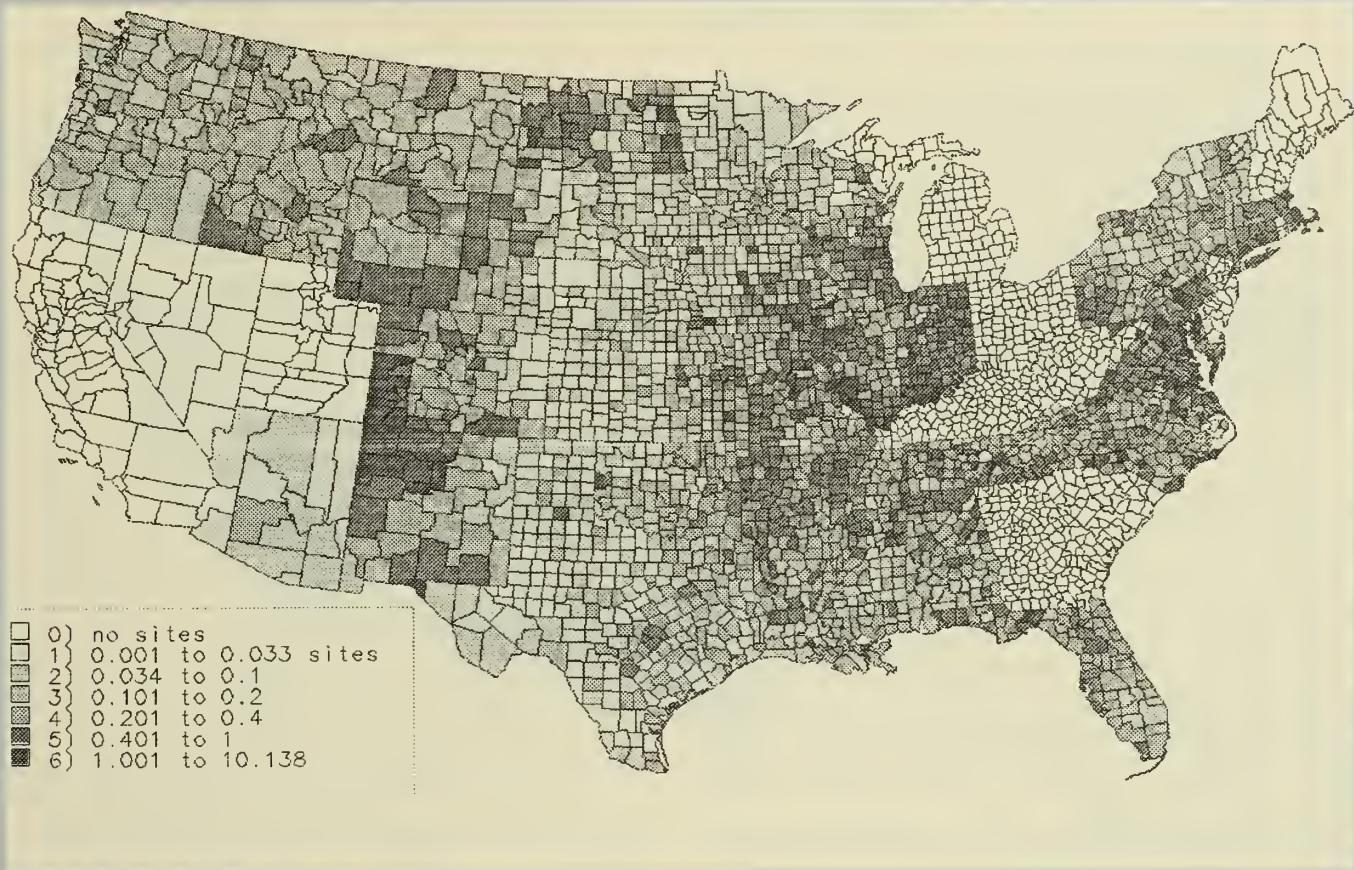


Figure 1. Archeological Site Densities per County.

tion, the "literature density" maps provide information on regionalization of the published and unpublished literature.

The present number of citations represents perhaps only one third to one fifth of the total, and thus gaps in any map produced are as likely to be gaps in data acquisition as in the literature. By linking the datasets it is possible to make increasingly complex queries, for example, to show all counties with a ratio of total sites to sites on the National Register that is more than 2 deciles below the median, or to display all counties that have had excavation reports on Paleoindians published during the last 10 years.

In addition to these archeological datasets, there are a number of continental and global environmental datasets that have been developed in response to global warming and related issues. Because archeological data is spa-

tially referenced, it is relatively easy to merge environmental data with cultural information. One of the most useful environmental datasets is that provided by the Advanced Very High Resolution Radiometer (AVHRR). With appropriate processing, it is possible to create a continental map of the vegetation intensity for each pixel imaged by the sensor. These pixels are nominally 1 km square.

The AVHRR data can be produced twice daily. Even though such temporal control is not needed for archeological purposes, these images provide previously unavailable data on the complex spatial patterning of "seasonality." A dataset provided by the EROS Data Center, U.S. Geological Survey, summarizes these data into bi-weekly images. A comparison of the vegetation intensity through the spring, summer, and fall indicates that the broad patterning in these distributions are much more complex than most archeological seasonality mod-

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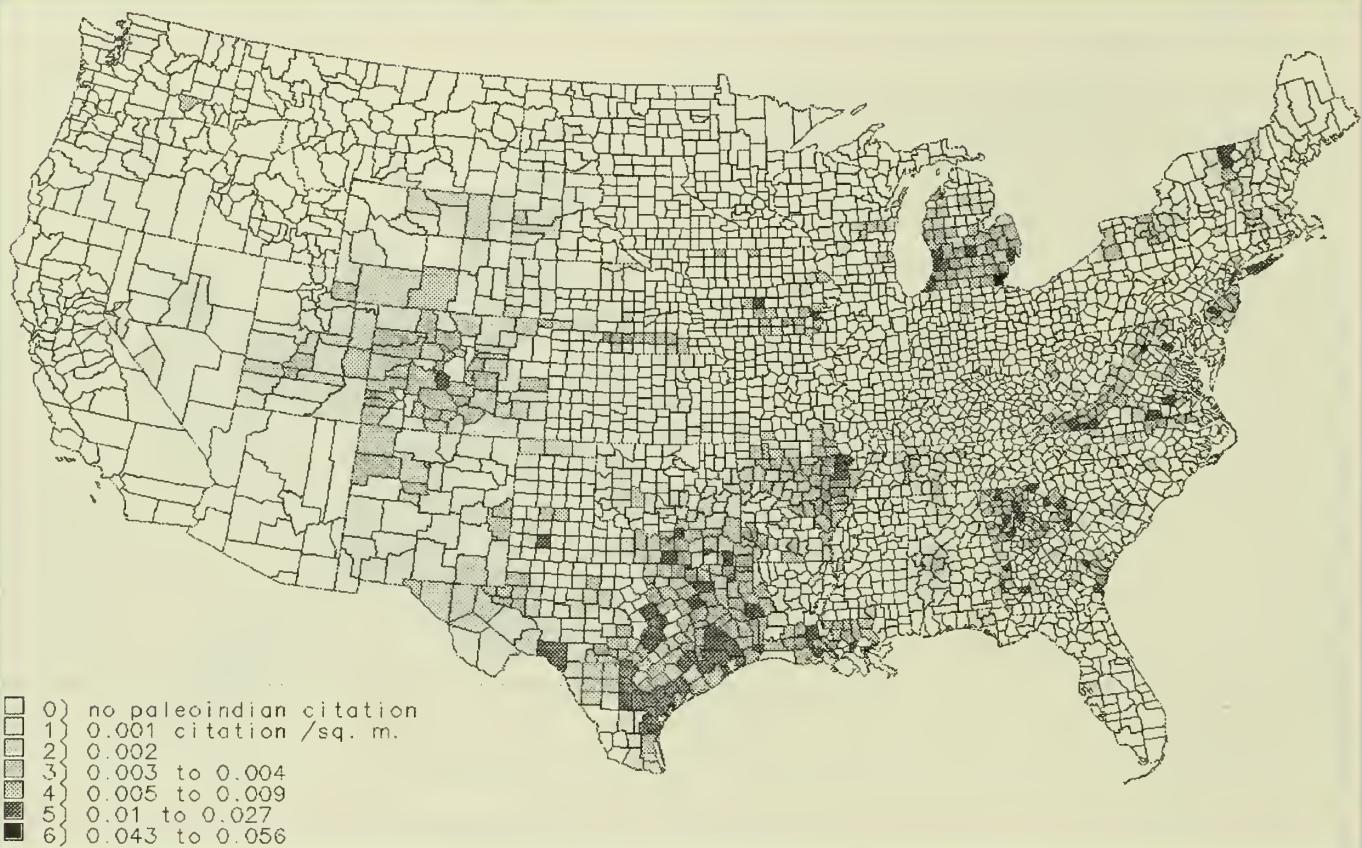


Figure 2. Paleoindian Citation Densities per County.

eling has previously suggested. Although data for the 1990s cannot be uncritically extrapolated into the past, these data do provide an accessible suite of data to develop new hypotheses for regional seasonality studies.

In addition to the AVHRR datasets, other GIS layers include hydrology, potential natural vegetation, and surficial geology. CAST plans to enter base climatic data and the results of modeling generated from these data. As part of the cooperative efforts of NPS, DOD, COE, and CAST these data, when complete, will be available to any researcher via one or more of the standard protocols for transferring electronic files between computers, i.e. FTP, Kermit, Xmodem.

At least one other continental dataset is undergoing initial development currently, with support from the National Science Foundation (NSF). It will include bioarcheological data recorded in accordance with the

forthcoming recommendations of a panel of bioarcheologists. Programs for both PC and Macintosh software, now being written, will allow entry of the data elements defined by this group. A parallel, multiuser database is being set up nationally, which will have data from the PC/Mac versions electronically up/downloaded.

The studies reported here have been supported by the DOD Legacy Program, the Southwestern Division of the COE, NPS, and NSF. Thanks are owed to Constance Ramirez, Larry Banks, Frank McManamon, Veletta Canouts, John Knoerl, Larry Aten and all the SHPOs and NADB Regional Coordinators who supported the work and provided data. For further information about these datasets, contact **W. Fredrick Limp, Director, Center for Advanced Spatial Technologies, 12 Ozark Hall, University of Arkansas, Fayetteville, AR 72701; telephone (501) 575-4575; fax (501) 575-3846; Internet:fred@kirk.uark.edu.**

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CHALLENGE

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feasible to perform manually. In short, the areas where such systems have had their greatest impact is in the automation of existing processes.

This should not be surprising to those archeologists who study prehistoric technologies because it is a common pattern: a new technology can only supersede an earlier one if the new technology's merits clearly outweigh those of the one that it replaces, or if other, non-technical forces are at play. Such a comparison is most obvious when an existing task can be done faster or more accurately using new technology. What is missing from this model, however, is the unanticipated effects of technology changes.

In the modern corporate world, one effect of increasing computerization has been the elimination of the middle manager in most companies. In the past the middle manager's role was to collate data from the lower levels of the organization and provide this information to the "boss" as well as to communicate decisions from upper management downward. With effective data systems in place, many corporations are now realizing that data can be automatically collated, structured, and presented to senior managers through automated "decision support" systems and that information can flow freely though the organization by way of electronic mail. The ultimate effect has been to "flatten" the organizational pyramid.

In such organizations, the computer has now gone from an accounting and inventory control methodology to one that is central to the organization and is a key element in the organization's "decision support." For this process to be successful, the organization has had to assess its data needs and work toward standardization of its information classes so that data can be moved easily. The organization has also come to realize the clear distinction between data, or the elemental facts, and information, which is the result of ordering these facts into meaningful structures.

Organizations have also realized that data may be structured in a potentially unlimited number of ways depending on the question being addressed. For this to be successful the data must be consistent and the definitions agreed upon. In a paradoxical way, because the data are subjected to such a wide range of, perhaps unexpected, analyses, it becomes

even more essential that data be initially reported in a consistent manner.

While one must always be cautious in arguing from analogy, there are substantial parallels to the ways in which more effective use of automated systems can fundamentally alter archeology. In all archeological studies, field-work and its analytical follow-up are the essential sources of data. Be it archeological survey, excavation, or whatever, all further investigation must follow from this base. How these data are converted into information is a function of theory and analytical methodologies. Of course, the process is not this simple, but this schematic can serve for now.

Much of the archeological legislation enacted during the last 20 years has attended to the issue of data acquisition. Archeological excavations conducted under legislative auspices such as the National Historic Preservation Act are "data recovery." What has clearly been more problematical is the lack of similar attention to the conversion of these data into "information," for it is, of course, this "information" that makes an archeological site eligible for listing on the National Register of Historic Places.

The transformation of data into information is a process mediated by theory, methodology and, perhaps less obviously, relationships to other data. In the same way that middle management spends much of the time massaging data to meet the changing needs of upper management in the corporate world, archeologists perform similar tasks as they restudy collections, consider distributions in the light of new survey data, and reanalyze excavations as a result of the development of new analytical methods. In all these processes archeology's middle managers are the "synthesizers." While the corporate world has had a surplus of middle managers, archeology has had a shortage of synthesizers. Anyone who has tried is well aware of the very considerable effort necessary to synthesize and integrate data from other than one's own work.

When automated systems are properly designed and used, however, they can not only serve the purposes of data recording or inventory control, but they can also serve as essential vehicles for making possible the continuing process of creation of new information from these data. With such systems as are now in place in some States, it is routine to log onto a computer on one's desk and request the locations of all archeological sites in a State that have flat pyramidal mounds with scientific excavations conducted

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since 1980, and then request that the system compute the distance from all these sites to the deposits where a specific raw material originates. It should be clear that operations such as this, done quickly in a "what if" format, materially change the sense of the "information" contained in the data about raw material found at particular sites.

For archeological and environmental datasets to be this easily available requires that there be a commitment to true "data recording," that data about archeological sites, artifacts, and their analyses be recorded in accessible automated systems, that the data be recorded in a consistent manner, and that individual archeologists have the necessary skills to access and manipulate these data. The fact that such systems are not more common is a result of institutional and conceptual limitations, not technical ones.

Consider another alternative. One of the crucial problems facing archeology today is the curation of artifacts. Even with high quality curatorial facilities, however, the data contained in them may be of limited physical accessibility. It is necessary to travel to the facility to study any materials held there. Again, suppose that one could sit down at a desk computer and locate all pottery vessels of a particular type, then ask that an image of each be displayed on the screen along with measurements and provenience. When such systems become widely available the character of a "curation facility" undergoes a fundamental change. It may be a storage facility for collection items, but more importantly it is a distribution point for information. The geographic location of the facility becomes immaterial; it is its electronic accessibility that is essential.

All of these examples, and the many others that could be discussed, from electronic newsgroups to virtual reality, make it clear that automated systems are fundamentally altering the way in which data and information can be acquired, distributed, and integrated. It is essential that archeologists make the organizational and conceptual changes that must follow. Professional recognition must be given to the "publication" of computerized datasets that are useful to others and to the efforts of those who work toward consistency in data recording. Institutionally, archeologists must recognize the need for resources and trained personnel to develop useful databases and to make them available to the widest possible audience, and Federal agencies must come to realize that the preparation of a printed report should be followed by "publication" of an electronically accessible dataset as well.

NADB

(Continued from page 1)

The directory is now accessible nationwide through the NADB Online System, which is supported by the National Park Service's (NPS) Departmental Consulting Archeologist/Archeological Assistance Program (DCA/AAP) and the Center for Advanced Spatial Technologies (CAST) at the University of Arkansas through a cooperative agreement. The Southwestern Division of the U.S. Army Corps of Engineers (COE) is also a cooperator and is providing expanded access to NADB through the Corps of Engineers Automated Program (CEAP) network. Detailed instructions about how to access and sign on to the system are found in the *NADB Update* column (See page 15).

The NADB Online System may be said to be a "database of databases." Because of the interconnectivity of many computer systems, the databases that may be identified in a menu need not be resident on the system. If a database is located elsewhere, NADB has the developmental capability of linking to the database through an interface that is transparent to the user. In those cases where such linkage is not possible, NADB at the very least can provide information about how another database can be accessed.

Although the design of the online system is evolving, the organizational structure and operating system are already in place. Users must identify themselves when they log onto the system. The user is then presented with a menu of available information or database modules; depending on the type of information, the user can either download general information or the results of a specific query made by the user. User manuals and online help can be accessed through the system.

Current and projected databases available to users through the NADB Online System include reports of archeological investigations, **NADB-Reports**; GIS applications using NADB-Reports records and other archeological data, mapped at the county level, **NADB-GIS**; and information about the implementation of the Native American Graves Protection and Repatriation Act, **NADB-NAGPRA**.

NADB-Reports

The Reports portion of the NADB Online System is resident and operational. More than 100,000 records of archeological planning and investigative reports are avail-

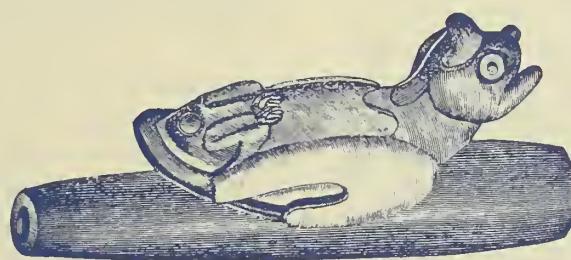
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able in the database. These reports contribute substantive information about archeological resources in the United States, territories, commonwealths, and associated States.

The majority of the reports now in the database are the so-called "gray literature" or reports of limited distribution that were on file in the State Historic Preservation Offices between 1985 and 1987. Since then, records to the database have been added by SHPOs and other Federal and State agencies as they begin to automate their record keeping. A significant addition of several thousand records was the result of an archeological overview of the south-central United States, which was sponsored by the Southwestern Division of COE and carried out by the Arkansas Archeological Survey (AAS). A similar overview of the north-central plains States, sponsored by the Legacy Program of the Department of Defense (DOD), is currently underway (See the article by Limp and Gisiger, this issue).

The stand-alone software, i.e., NADB-Reports, used to facilitate data entry, has undergone extensive development, and contractors and other data providers have entered data using four major versions. While conversion of the records from one version to another has been successful, for the most part, there are errors in the records that must be corrected by data entry personnel, an ongoing process necessary for long-term records maintenance. The systemization of the information and access to the NADB-Reports records should help in flagging missing data, inconsistencies, and miscoded entries, all of which, when found, are easily corrected.

The current entries in the NADB-Reports database were last updated in 1989. An update is planned in the Spring of 1993 to coincide with a scheduled system upgrade. The network of NADB-Reports data providers is composed primarily of SHPOs, State Archeologists, and Federal agencies that enter into cooperative agreements with NPS for new records and regular updates .



Some NADB-Network data providers use different automated systems for bibliographic records. The conversion programs transfer these fielded data into the NADB-Reports format. Although there is basic agreement on information for citations, the NADB-Reports format is an expanded bibliographic entry, which also references geographic location, i.e., State and county, sponsors, and keywords, not all of which are present in other systems. Therefore, users may observe differences in information categories between records that are due solely to differences in the programs used to enter the data. NPS has entered into a cooperative agreement with the National Conference of State Historic Preservation Officers to work toward agreed upon standards.

Records in the NADB-Reports format can be queried by State, county, worktype, cultural affiliation, keyword, material, year of publication, title, and author. By using logical operators, such as the Boolean "or" users can query for specific references. Wildcard characters enable the user to search substrings of text. Both types of operators make it possible to build complex queries.

Those reports that satisfy a query can be viewed on the screen and saved to file on the user's hard disk. There are two report formats: (1) a record of the complete citation; and (2) a bibliographic reference list of the results. The bibliographic reference list tags the beginnings and ends of strings of text that are italicized or underlined in the citation. Using his or her own word processing program, the user can reformat the citations using global search and replace commands. The bibliographic format follows the *American Antiquity* style.



The new upgrade of the stand-alone software, i.e., NADB-Reports, Version 2.02, features a report format for use in *WP Citation*. This reporting format and formats for other citation databases, such as *Procite* and *Notebook II*, are being planned for the NADB Online System.

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GIS Applications

The Center for Advanced Spatial Technologies (CAST) has acquired several available environmental and economic datasets and mapped them into the GRASS system. GRASS is a geographic information system developed and supported by the U.S. Army Construction Engineering Research Laboratory (CERL), in conjunction with the Soil Conservation Service (SCS), the GIS Division of NPS, the staff at CAST, and others. Archeological data mapped onto these datasets enable investigators to study distributional information about variables of site location, for example, site density relative to geology, elevation, or vegetation, and variables relating to site disturbance, for example, demographic changes at the county and State levels that may signal increased developmental activities.

As discussed in the article by Limp and Gisiger, this issue, the records of reports in the NADB-Reports database have already been mapped by different search criteria at the county level. CAST is now in the process of mapping other archeological data, such as site densities per county. These data can be downloaded, through Internet, to other GRASS users, and it is possible to map the NADB-Reports records by coordinates, such that a user who logs onto the NADB Online System could download the results of a query to be mapped in other geographic mapping systems.

The Southwestern Division of the COE and DOD Legacy Program have supported the development of many of these and other GIS applications. In fact, the databases for NADB and the Southwestern Division of the COE are co-resident on the same system, so that the COE can access NADB-Reports.

Once procedures have been agreed upon by the cooperative agencies, other users can access the GIS datasets and applications from the NADB menu. Users interested in such applications should follow the *NADB Update* column and the status report carried by the NADB Online System.

Native American Graves Protection and Repatriation Act (NAGPRA)

The Department of the Interior's Departmental Consulting Archeologist, charged with implementing NAGPRA regulations, and the Review Committee charged with compiling inventories by the Act, need to communicate quickly with Native Americans, scientists, and museum professionals. At least three types of information exchange have been identified in the preliminary design of a NADB-

NAGPRA module: (1) reference documents; (2) a mailings directory; and (3) inventory data.

Reference documents would include copies of the Act, congressional reports, regulations, and guidelines as they are developed. A mailings directory would list names and addresses of official Tribal, museum, and Federal agency representatives. Inventory data would include, in electronic form, notification letters and summaries and inventories of human remains and cultural items. As conceived, the notices, summaries, and inventories would be cross-referenced, that is, the database would serve as a locator for the electronic files containing notices and accompanying data. Where feasible, these data would be linked with other databases being developed for similar purposes.



Bert Herbert, NADB Regional Coordinator, National Park Service Mid-Atlantic Regional Office, reviews records using the stand-alone software, NADB-Reports, Version 2.01. (Photo courtesy of Lloyd Chapman)

These three types of information would require different system capabilities. In addition to allowing users to query databases, the module must support some message or bulletin board capability, perhaps even an ability to field questions and comments. The use of imaging technologies, at least to download text that was originally scanned in as an electronic file, is also under consideration. The Archeological Assistance Division (AAD) already maintains a mailings database that can be updated with appropriate names and addresses and cross-referenced by agency, museum, or American Indian Tribe or Native Hawaiian Organization for consultation and notification purposes. The DCA/AAD is cooperating with other organizations in the development of inventory databases. The database pres-

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Archeological Use of Analytical or Scientific Databases

By Ronald L. Bishop

The use of sophisticated types of scientific analyses, especially those developed by the physical sciences, has led to a staggering accumulation of analytical data. In order to care for this information and to promote ongoing research, these data are being integrated into analytical databases where they become not only tools for providing familiar types of inventory and information management, but become potential subjects for analytical research themselves.

The Smithsonian Archaeometric Research Collections and Records (SARCAR) was created in response to the increased volume of scientific and technical data from analyzed archeological objects and to prevent the loss of potentially valuable information that would be pertinent to current or future research. Its formation explicitly recognizes the need to share basic resources and information among different national and international research groups. If, for example, a researcher is interested in using a particular technique to determine where a certain kind of ceramic ware was produced, it would be useful to know what ceramic wares have been previously analyzed from the



ently being developed by CAST is a case in point. The model being used is adapted from the NADB-Reports module that the staff at CAST helped design originally.

Some of the information in the NADB-NAGPRA module is scheduled to come online early in 1993, for example, reference documents and the mailing directory. Information will be updated as it becomes available, and information about the status of any particular dataset will be available through the NADB Online System.



All of these modules and others being discussed, e.g., specialized or topical bibliographies, the National Register Online System, educational materials, offer information to a broad constituency of resource managers, contractors, researchers, museum professionals, preservationists, Native Americans, and others. The existence of databases

area, to know which techniques were used, and to have the ability to integrate these comparative data in the new study.

The SARCAR database contains information from different methods of analysis, especially those generated by instrumental neutron activation analysis and lead isotope analysis. Like other scientific databases, such as the Protein Data Bank or the National Neutron Cross-section Data Bank at Brookhaven National Laboratory or the NIST/Sandia/ISDD Electron Diffraction Database, SARCAR records contain observational data that are recorded as numerical data to represent non-divisible entities, e.g., elemental compositions or lead isotope determinations.

While it may appear that numerical data are somehow more reliable than classificatory data, all data, even when acquired with the latest tools technology has to offer, are not obtained with equal confidence nor are they necessarily consistent within one laboratory, let alone consistent between laboratories. If the objective of an analytical database, such as that represented by SARCAR, is to be a common database of pooled data that are useful to researchers, the data must not only be accumulated, they must also be evaluated to insure that they do not exceed "acceptable" limits of error.

Analytical data must be reproducible within some degree of tolerance for data comparison. However, investigators

compiled and made available through the NADB Online System offers the opportunity to synthesize information and identify accomplishments, as well as policy issues, on a national level.

While this is an exciting prospect, the archeological and preservation community also has a responsibility toward good design, quality data, adequate organizational support for the enhancement and maintenance of the data records, and funding to upgrade programs and technology needed for the widespread and timely dissemination of this information.

For further information about the National Archeological Database, contact Veletta Canouts, NADB Coordinator, Archeological Assistance Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; telephone (202) 343-4101.

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have often found that what has been "tolerated" in projects of others cannot be "tolerated" in theirs. This problem of data comparability is not new and has been encountered previously by archeologists seeking to accumulate data. In the 1970s, the Southwestern Anthropological Research Group (SARG) attempted to create a pooled database that could be searched for internal patterning on aspects of site location. One of the project's more lasting contributions was in raising an awareness of the complexities of attempting data comparability across projects involving several investigators and problem orientations. More recently, an attempt has been made to create a database of C14 dates, as most of the information on dates determined by labora-

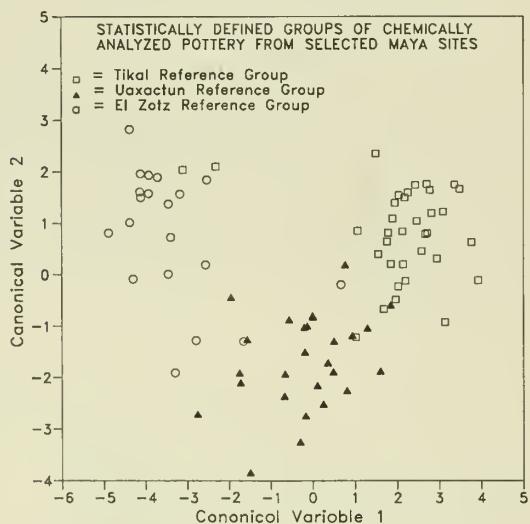
database. Most laboratories strive to produce "good" data; occasionally, however, shortcuts are taken with unfortunate consequences. To avoid importing "bad" data, analytical databases require database administrators who are knowledgeable of the data being generated by particular analyses. These administrators must be willing to exercise judgement about the quality of the data to be included, and these evaluations must be carried along with the data in the database.

Archeological data that provide the interpretive context for scientific measurements are highly variable, and, in contrast to the data obtained by the experimental sciences, the inconsistencies cannot be overcome by reference to standards. In fact, aside from the absolute provenience of an archeological specimen, all other descriptors are subject to change as the result of historical factors as well as theoretical and personal biases. Archeological terminology and description are not standardized, and the classification of even something so basic as vessel form varies widely depending on the questions being asked by the researcher.

Continuous compromises must be accommodated among those who tend to "lump" certain attributes into a single entity and those who would "split" categories. What is recorded as part of the archeological record is, therefore, a synthesis and is not equivalent to the raw data produced, for example, by physical measurement. Furthermore, these syntheses change as new data are accumulated and new interpretations made.

For a pooled analytical database to meet the demands of a national or international multiuser community it must accommodate either flexibility or open-endedness that strains the management goals of most databases. The development of newer technology may result in an improvement of a measurement's analytical precision or may enable entirely new kinds of measurements to be made. When used in specific research applications, deficiencies in the database can be identified and adjustments made to improve its ability to meet changing needs.

More difficult is the addition of new contextual information. An archeologist usually utilizes existing data to meet a short-term research objective. Furthermore, he or she may hold very distinctive views on the data, which, after all, were collected for some specific research objective. Therefore, the quantity and quality of data contributing to a pooled database are likely to be project specific. Praise



Ceramic reference groups for pottery from selected Late Classic Maya (A.D. 600-850) sites have been derived from a multivariate analysis of trace element data. Previously defined data sets, such as those shown in this bivariate plot, provide information that can be extended by new research or, at the least, facilitate the efficient initiation of a new project.

tories lies dormant since only a small percentage of dates are published in professional journals. This, too, has encountered difficulties with data comparability.

When there is a systematic bias built into the data derived from a laboratory, reference to common standards, against which the original measurements were made, permit the data to be normalized into a more consistent or comparable

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the exceptions! But, given professional demands and the tendency to succumb to human nature, how reasonable is it to expect that supplemental information will be provided that might maximize the use of the data by someone else at a later time? For the immediate future, the use of archeological analytical databases by someone other than the original investigator will probably be limited to a level of greater generality than the purpose for which they were originally intended.

The addition of new information in an analytical database will in all likelihood continue to depend on the re-examination of the specimen. SARCAR manages a collection of reference materials, that is, the residual material that has been sampled for analysis and is not expended during the analytical process. These can be consulted for verification or for additional analysis as needed. The curation of the objects that have undergone analysis is primarily the responsibility of the host institutions. The documentation of the location of these objects must be cross-referenced by both the analytical database and by the museum or repository where the objects are housed. Some museums are beginning to curate analytical specimens in special collection units that can be accessed easily for comparative purposes.

The use of analytical databases is still evolving. The extent to which they further existing and future research depends, in large part, on the willingness of the archeologist to look beyond immediate research goals and document or update information commonly recorded by other researchers. Many of the "pioneers" in the application of scientific methods to archeological materials, i.e., chemists, physicists, and archeologists, are nearing or already enjoying relative retirement. They are, nevertheless, still available to assist in augmenting existing descriptive information. New researchers reviewing reference materials can also update the information in a database. Thus, data no longer being actively utilized by the original investigators do not become lost in the laboratory or in the computer, and data preservation rather than a storage problem becomes a process of data enhancement.

For further information about SARCAR contact Ronald L. Bishop, Senior Research Archaeologist, Conservation Analytical Laboratory, Museum Support Center, Smithsonian Institution, Washington, DC 20560; telephone (301) 238-3715.

FAUNMAP: An Electronic Database Documenting Late Quaternary Distributions of Mammal Species

By Russell W. Graham

FAUNMAP is an electronic database documenting the late Quaternary period distribution of mammal species in the United States. It is being developed at the Illinois State Museum (ISM) with support from the National Science Foundation. The project is co-directed by Drs. Russell W. Graham of ISM and Ernest L. Lundelius, Jr. from the University of Texas at Austin. The primary purpose of this database is to investigate the evolution of mammalian communities. Specifically, with statistical techniques and mapping capabilities of a Geographic Information System (GIS), changes in the distributions of individual species and their effects upon mammal community composition can be documented for the late Quaternary. Understanding these processes will also facilitate interpretations of human exploitation of mammalian resources.

For the past two years, data have been captured from paleontological and archaeological sites that contain mammalian remains. There are currently encoded data from about 2000 sites with an estimated total of 2500 sites when the database is completed. FAUNMAP focuses on sites in the contiguous 48 states during the last 40,000 years, i.e., 40 ka, or essentially the limits of radiocarbon dating. Selection criteria for incorporation of sites into the database include the following: 1. known geographic location (at least county level); 2. chronologic controls (stratigraphic, biostratigraphic, cultural affiliation, radiometric dates); and 3. voucher specimens (actual specimen, cast or photograph) in a public institution. A network of 14 regional collaborators from throughout the United States and Canada are assisting with data selection and validation.

Data are derived from the scientific literature, including selected theses and contract reports. Information on site names and numbers, location, relative and absolute chronologies, including cultural associations, depositional systems, taphonomic attributes, and mammal species from each site is being recorded. The structure of the database allows for differentiation of the smallest component of a site, e.g., microstratigraphy, cultural component, etc., as defined by the original author. This information is then

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linked with an electronic bibliography documenting data sources.

Data are entered electronically on IBM compatible PC computers with a commercial relational database software, PARADOX. This approach has several advantages. By using PCs, the GIS workstation is not tied up with data entry. By having the database on a PC platform with a commercially available database manager, it is also easy to distribute the database to anyone with this or a similarly compatible system. In other words, one does not need a sophisticated GIS workstation to use the attribute files of the database.

Data files can be sorted in a relational environment selecting for any combination of attributes desired, e.g., one

species from a certain age range and specific site type. This information is then transported via ETHERNET to an IBM 6000 GIS workstation in order to generate time series maps of changing distributions. By using latitude and longitude as the site locators, the database can be manipulated on any GIS system. Both ARC/INFO and GRASS are used at ISM.

The real power of a GIS as an interdisciplinary tool is its ability to easily overlay maps of different types. For FAUNMAP, maps of modern mammal species distributions and Laurentide Ice Sheet boundaries have been digitized with ARC/INFO and can be overlain on the paleontological and archaeological site maps for different species at various time intervals. Likewise, the FAUNMAP database can be overlain on other types of maps, e.g., paleovegetation or paleolandscape.

Future analyses will involve the production of distribution maps for individual species at select time intervals, e.g., >20, 15-20, 10-15, 8-10, 4-8, and 0.5-4 ka. Various techniques of spatial analysis, clustering, and ordination will be used to investigate changes in species associations, provinciality, and patchiness. Results of these investigations will be published as scientific reports. In addition, the time series maps, bibliography, and entire database will be published by the ISM as part of this project. Future access to the electronic database is being considered.

A database of this nature has other biological and archaeological applications, for example, paleoenvironmental and paleoclimatic reconstructions, extinction modeling, subsistence studies, interactive exhibits, etc. The FAUNMAP database has already been used to document changes in the distributions of two carnivores, American marten (*Martes americana*) and fisher (*Martes pennanti*) throughout the late Quaternary. Time series maps for these two species demonstrated that the marten migrated north with climatic warming at the end of the Pleistocene period while the fisher remained in the southern Appalachians until historic times. Such zoogeographic patterns are valuable to various wildlife managers who, for example, might consider reintroducing the fisher into the southern Appalachians. It is hard to imagine all of the uses for the FAUNMAP database but the number of uses is sure to grow with time.

For further information on the FAUNMAP database contact Russell Graham, Research and Collections Center, Illinois State Museum, 1920 South 10 1/2 St., Springfield, IL 62703; telephone (217) 785-0037; Internet: Graham@denrl.igis.uiuc.edu.



*This composite map shows that the range of both species of marten, the American Marten (*Martes americana*) and extinct noble marten (*Martes nobilis*) extended into lower elevations and latitudes during the late Pleistocene period when climates were cooler and moister. The modern (shaded area), historic (line), and the late Pleistocene (dots and triangles) areas of marten distribution are shown.*

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Efficient Management of Archeological Collections: The Arkansas Example

By Kathleen H. Cande

In recent years, archeologists have begun to use relational databases to inventory masses of archeological data. In contrast to a file management system, a relational database is a collection of data stored in tables that allows the user to specify relationships between different types of data. The flexibility of relational databases currently in use by the Arkansas Archeological Survey (AAS) allows inventory data of archeological specimens and their provenience to be linked with collections management data required by the National Park Service (NPS) and other Federal agencies.

DELOS is a computer-based data processing and retrieval system that has been developed and augmented by AAS for the past 10 years. The DELOS database system has thus far been used primarily for inventory and analysis of collections generated under federal contracts. DELOS is designed to afford flexible processing of data concerning archeological materials and their spatial context by linking the vertical and horizontal location of an artifact with descriptive observations about its morphology, function, and cultural context. The basis of the DELOS artifact classification system is a hierarchical classification scheme using a lexicon, or dictionary, of acronyms beginning with gross artifact classes and "keying" down to finer and finer classification units. DELOS is integrated with the routine field and laboratory acquisition processes, eliminating redundant data encoding and making a variety of descriptive and analytical reports rapidly available. Recent additions to the system have expanded its use to collections management functions.

An especially important feature of DELOS is its ability to export data into other database programs and analytical packages for further manipulation. Although DELOS is run on a Unix-based, Concurrent 6400 computer at AAS, it can also be used with MS-DOS personal computers running Informix-SQL relational database management software. DELOS data can also be accessed by Geographic Information Systems (GIS), such as GRASS (Geographic Resources Analysis Support System) of the U.S. Army Construction Engineering Laboratory, for analyzing intrasite spatial patterns and creating feature/artifact distribution maps. In addition, DELOS data can be imported into statistical software

packages like SYSTAT and S for more complex statistical analyses such as cluster and factor analyses.

A new way of "sharing" DELOS data with another database has recently been put into operation as part of a cooperative agreement with the Southwest Regional Office of NPS. AAS has to submit catalog data on artifacts and documents for incorporation into the NPS Automated National Catalog System (ANCS). This microcomputer-based relational database management system uses dBASE III Plus files compiled in Clipper. A variety of menu driven programs feature accession and catalog programs for cultural and natural history collections that include archeology and the production of reports on selected data elements such as material or photographic number.

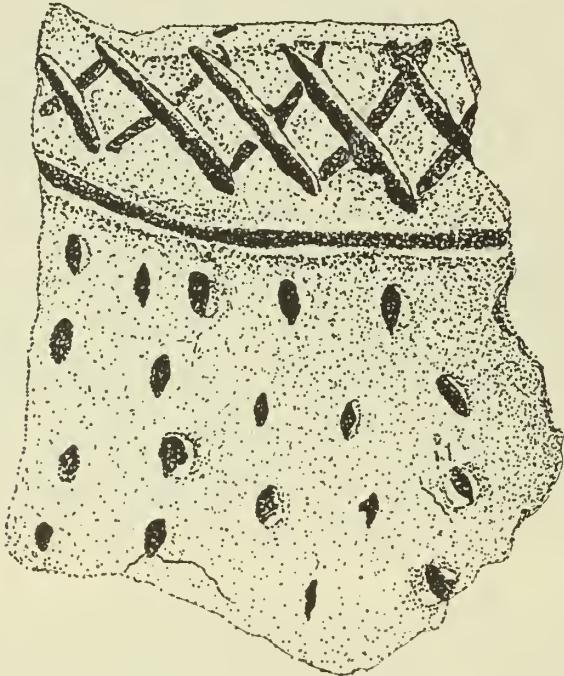
Rather than mandating two automated systems or rekeying data into ANCS, an automatic linkage was developed to translate DELOS data into the ANCS format. The programmers confronted and solved a number of difficult conversion issues during the design and testing phases of the project. The DELOS system focuses on a hierarchy of morphological and functional aspects of each artifact or group of similar artifacts. ANCS is a catalog geared toward a broad spectrum of museum collections containing such diverse items as furniture, documents, and natural history specimens, as well as archeological specimens. The first step in the conversion, therefore, involves the construction of an interactive INFORMIX-4GL program that can produce a report combining data from one or more tables in the DELOS database, as well as from computed program variables. Required ANCS variables not present in the DELOS database such as the NPS park acronym and location of a collection are prompted for at the beginning of the 4GL program and input at that time.

As new hardware and software packages become available, and analytical needs change, AAS database management needs must be constantly reviewed. The marriage of the contextual DELOS data with the collections management data fields in ANCS has begun to strengthen archeologists' ability to track the conservation treatment of collections, to monitor their condition, and to locate individual artifacts needed for museum display or specialized analysis. With more ability to manipulate larger amounts of data, however, comes increased complexity and the need to commit the resources required to maintain and improve access to the records. Further information about the Arkansas databases may be acquired by contacting Kathleen H. Cande, Research Assistant, Arkansas Archeological Survey, P.O.

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Box 1249, Fayetteville, AR 72702-1249; telephone (501) 575-3556; fax (501) 575-5453.

The NPS Automated National Catalog System can be used to catalog historical, archival, archeological, ethnological, fine arts, biological, geological, and paleontological collections. It is a user friendly application that has the following capabilities: (1) data validation; (2) report generation; (3) search standardized data fields; and (4) potential for networking and centralization. Because of its wide-ranging application, a number of organizations may be interested in the system. The program disks and accompanying user manual are available to the public. A \$25.00 payment is requested for defraying the cost of processing under the Freedom of Information Act. Orders should be sent to the Curatorial Services Division, National Park Service,



This drawing of a Parkin punctuated/Barton incised rim body sherd is from the Richard's Bridge site (3CT11/22), Crittenden County, Arkansas. To illustrate how artifact data are encoded into both the DELOS and ANCS databases and where data fields are shared, examples of data categories and information that are encoded in them for the potsherd in this drawing are shown at right. Note the hierarchy of terms in the DELOS artifact classification, from general to specific. (Drawing by Aaron Coldon)

P.O. Box 37127, Washington, DC 20013-7127. For more specific information about the system itself, contact Joan Bacharach, National Park Service Museum Registrar, at the same address; telephone (202) 343-8142; fax (202) 343-1767.

	Site Number: 3CT0011
	Catalog number: 91-969-1-0-0
D	Prehistoric
	Artifact Classification: POT, RMBDY, JAR, PUNCT,BODY, INCI, RIM (translation: Aboriginal pottery, rim/body sherd, jar, punctuations on body, and incised on rim)
E	Type/Variety:Parkin Punctated, Barton Incised
L	Raw Material: SHELL (temper type)
	Weight: 151.1
	Count: 1
O	Cultural Affiliation: Parkin Phase
	Condition: 31 (fragment, excellent condition)
	Maintenance cycle: 1.0/1992
S	Unit/Quantity: 1 of 1 units in a 5 inch by 5 inch interior storage box
	Treatment: 0 (protective/stabilizing container)
	Classification: ARCHEOLOGY, PREHISTORIC, MINERAL, CERAMIC
N	Object Location: AAS, Room 210, Rack 1
	Controlled Property: N(o)
	Object Status and Year: STORAGE 1991
	Catalog Number: ABCD750
	Acquisition Type: FIELD COLLECTION
	Acquisition Date: 18OCT1991
	Accession Number: ABCD-00011
C	Object: ABORIGINAL POTTERY, RIM/BODY SHERD
	Description: JAR, PUNCTATED, INCISED
	Site of Original Collection:
	3CT0011/RICHARD'S BRIDGE/CRITTENDEN CO
	Historic/Cultural Period: PARKIN PHASE
S	Other Numbers: AAS 91-969-1-0-0
	Identified By and Date: CANDE, KATHLEEN H/18OCT1991
	Cataloger and Date: CANDE, KATH-

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NADB Update

The National Archeological Database (NADB) came online on September 15, 1992 (Fig. 1). The NADB-Reports database module is operational, and users have access to an expanded bibliography of approximately 100,000 records of reports of archeological investigations. Other database modules are being developed, and information related to the Native American Graves Protection and Repatriation Act is expected to go online in 1993.

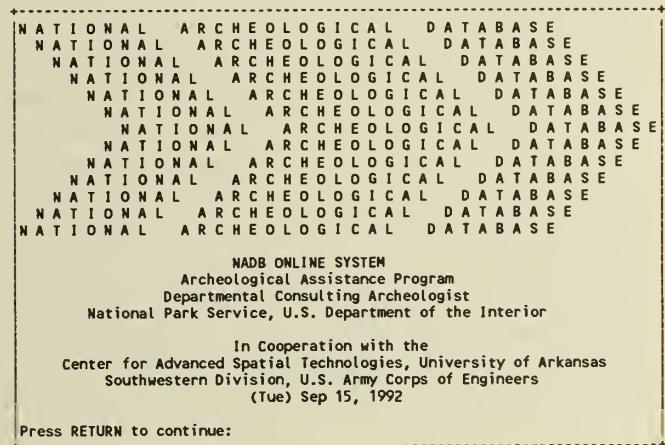


Figure 1. Introductory Screen for the NADB Online System.

The NADB Online System can be accessed in several ways, through: (1) a modem; (2) the Internet; and (3) the U.S. Army Corps of Engineers (COE) Automated Program communications network (CEAP). Whatever is used, the logon to the system is nadb and the password is gonadb, all lower case letters as the program is case sensitive (Fig. 2).

Once you have logged in, you will be asked to identify yourself and your organization. This information is used to monitor system use and, once completed, does not have to be entered again unless there is a change.

The system is available 24 hours a day and is maintained and operated by the Center for Advanced Spatial Technologies (CAST) at the University of Arkansas. Specific information about the system and technical support is available online.

There is no charge to use the NADB Online System. Users are responsible for any telephone charges incurred while connected to the system, however. To help reduce costs, users can send the results of their query to file for later retrieval; that is, a user does not have to remain on the line while a query is being run. The identification information allows the system to link the query results to the user.

Modem

The online database can be accessed through a modem and telecommunications software. The information needed to configure the software includes the telephone number, the speed of the data transfer, and terminal settings.

Although there are many satisfactory telecommunications software packages, the one that has been used effectively in the beta test is ProComm or ProComm Plus. The current settings used with ProComm Plus are Parity-Even, Data Bits-7, and Stop Bits-1. The system is capable of sending data at 9600 Baud. Probably the most common setting for users, at the present time, is 2400 Baud. Wait for the screen prompts; do not type ahead of them as you can freeze communication. The telephone number is (501) 575-2021. It is a toll over number, allowing simultaneous use of the system.

When you log in, you will need to identify the terminal emulation you are using. The terminal emulations that appear to work best using ProComm Plus are listed on the screen. Vt100 is the preferred setting; the others are listed in descending order of preference.

Internet

The Internet is a global interconnection of computer networks of which NSFNET is the largest part. Most major universities and many Federal and State agencies are on Internet. If you are on Bitnet, check with your systems administrator as many universities with Bitnet also have Internet. The system cannot be accessed via Bitnet, which is used primarily for electronic mail.

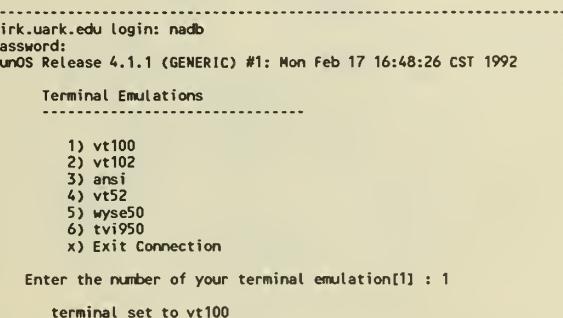


Figure 2. Logon screen using a modem.

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Internet allows the user to interact dynamically with the host computer, i.e., the NADB Online System. Current access through Internet uses the Telnet protocol, either the name or number address: **telnet kirk.uark.edu** or **telnet 130.184.71.16**

A FTP protocol that will better facilitate downloading of files is being set up as this article goes to press. The query output on the Internet is currently sent via e-mail. Information about the FTP protocol will be available once you have logged onto the system.

CEAP

COE has established a telecommunications node at the University of Arkansas to enable COE to access the NADB-Reports Online system and the Southwestern Division's GIS archeological database system. The COE Southwestern Division, the National Park Service (NPS), and the University of Arkansas have entered into cooperative agreements to use the COE Automated Program (CEAP) network to access NADB.

... Federal Agencies, American Indian Tribes and Native Hawaiian Organizations, and State Agencies are Invited to Access NADB Through CEAP

The COE Southwestern Division and NPS invite the archeological and historic preservation community to participate in a pilot project to assess the effectiveness of linking existing databases for better management of cultural resources on a national level. For a period of one year, beginning September 15, 1992, participants can dial cooperating COE communications hubs/nodes to gain telephone access to NADB.

The invitation is extended to Federal Historic Preservation Officers and their affiliate offices, Indian Tribal Governments, Native Alaskan Corporations, and Native Hawaiian Organizations , State Historic Preservation Officers, and State Archeologists and their cooperators. Those who qualify and are interested in participating in the pilot program should contact the project coordinators: **Larry Banks, Archeologist, U.S. Army Corps of Engineers, Southwestern Division, 1114 Commerce St., Dallas, TX 75242-0216; telephone (214) 767-4520;** or **Veletta Canouts, National Archeological Database Coordinator, Archeological Assistance Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; telephone: (202) 343-4101.**

Training

1993 Marine Field School

Phase 2 marine archeological operations have begun on the site of the galleon *Nuestra Senora del Pilar de Saragossa Y Santiago*, which was lost off Guam while bound for Manila in 1690. The *Pilar* Project is being carried out with the cooperation of the Guam Historic Preservation Office, Department of Parks and Recreation, and U.S. Advisory Council for Historic Preservation. R. Duncan Mathewson III is Director of Archeology. During May and June 1993 storm damage to the project base line was repaired, the site was mapped and prepared for excavation, and a rubble over-burden removed. Land based activities included conservation treatment of artifacts and enhancement of the computer system for recordation of artifacts. These include a small anchor, musket and cannon balls and, a few silver coins.

New work boats have been procured and a venturi dredge system developed, and Marine Archaeology Field School sessions have been planned for the *Pilar* Project for May-August 1993. For further project information contact Director Anthony C. Mariano, Guam Historic Preservation Office, Government of Guam, 490 Chalan Palasyo Road, Agana Heights, Guam 96919; telephone (671) 477-9620. Persons interested in information about the summer field school should contact John Bent, Project Director, Marine Archaeology Field School, *Pilar* Project, P.O. Box 1649, Agana, Guam 96910; telephone (617) 477-3681; fax (617) 472-3682. Early registration is recommended as space is limited.



Archeology Worldwide

UNIDROIT Multilateral Convention on the International Protection of Cultural Property

By Ruthann Knudson

UNIDROIT is the acronym for the International Institute for the Unification of Private Law. UNIDROIT is drafting a convention to clarify issues of various countries' civil laws that would be used to implement the 1970 UNESCO Convention on the Protection of Cultural Property requirements for "just compensation to an innocent purchaser or to a person who has valid title to [illegally transferred 'cultural property']. " The United States is a Member State in this 55-member organization.

In the early 1980s UNESCO expressed interest in a UNIDROIT 1974 draft Uniform Law on the Acquisition in Good Faith of Movable Property. The illicit or unauthorized movement of "cultural objects" between countries has been focussed on periodically since 1945 by the United Nations and several other international organizations. The United States became a party to the 1970 UNESCO Convention after the 1983 passage of the U.S. Convention on Cultural Property Implementation Act (P.L. 97-446). Since then Canada and Australia have also ratified the convention, but none of the western European "art market" countries has done so — participation in the convention is primarily among the "art exporting" countries. However, 20 years after development of the UNESCO Convention, UNIDROIT is again seriously addressing the civil law issues to try and get both art market and art exporting nations to participate in the 1970 Convention.

There have been two meetings of governmental experts to draft this convention, and a third session will be held in Rome, the UNIDROIT headquarters, in November 1992. At the second session, the draft was revised to include two sections that cover "illegally excavated" objects as well as stolen or illegally exported objects. Both the policy and legal implications of this for U. S. archeological materials have to be well addressed in further governmental expert meetings, and the U. S. position on these issues will be developed based on the advice of an Advisory Committee Study Group on International Protection of Cultural Property. The Departmental Consulting Archeologist of the National Park

Service has been asked to participate in this Study Group, and the National Park Service has been asked to participate in the U. S. delegation to Rome in early 1993, and thereafter. The Study Group includes representatives of public and private organizations.

If this convention is ratified by the United States, its implementation will have to be confirmed by the U.S. Congress. There are several aspects of it of concern to the protection of U. S. archeological resources. The definition of "cultural objects" and "cultural property" is a basic issue, so that the terminology is neither restricted to the fine art market nor so open-ended that it includes anything that someone decides is "cultural." Issues of restitution, repatriation, financial compensation, good faith possession, statutes of limitation, and State recognition of foreign laws all are involved.

Background documents on this issue include:

- UNIDROIT Study LXX - Doc. 19 (August 1990) *The International Protection of Cultural Property* (Preliminary Draft Convention on Stolen or Illegally Exported Cultural Objects Approved by the UNIDROIT Study Group on the International Protection of Cultural Property) with *Explanatory Report*.
- UNIDROIT Study LXX - Doc. 22 (May 1991) *Committee of Governmental Experts on the International Protection of Cultural Property*, working papers submitted during the first session of the Committee (Rome, 6 to 10 May 1991).
- UNIDROIT Study LXX - Doc. 23 (July 1991) *Committee of Governmental Experts on the International Protection of Cultural Property*, report on the first session (Rome, 6 to 10 May 1991).
- December 5, 1991 Memorandum from Harold S. Burman, Department of State Office of the Legal Adviser (L/PIL) to the Advisory Committee Members and Commentators on the Proposed UNIDROIT Convention on the International Protection of Cultural Properties on issues raised by the draft UNIDROIT Convention on International Protection of Cultural Property; report of the first meeting of government delegations; preparation of U.S. positions for the second UNIDROIT meeting January 20, 1992.

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•UNIDROIT Study LXX - Doc. 30 (June 1992) *Committee of Governmental Experts on the International Protection of Cultural Property*, report on the second session (Rome, 20 to 29 January 1992).

•UNIDROIT Study LXX - Doc. 31 (June 1992) *Committee of Governmental Experts on the International Protection of Cultural Property*, preliminary draft, UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects.

These documents are currently being reviewed by the Departmental Consulting Archeologist, Society for American Government Affairs Committee, American Anthropological Association Archeology Division and Committee on Museum Anthropology, Society of Professional Archeologists, Archaeological Institute of America North American Committee, US/ICOMOS, and several individuals. Questions about the proposed convention should be directed to **Harold S. Burman, U.S. Department of State Office of the Legal Adviser, 2100 K St. NW, Suite 402, Washington, DC 20037-7180; telephone (202) 653-9852; fax (202) 653-9854.**

Conference on Tropical Forests

The Organization of American States and U.S. Forest Service will co-sponsor a conference on "Environment and Archaeology, Emerging Trends and New Techniques for Heritage Management and Sustainable Development in Tropical Forests" December 6-12, 1992, in San Juan, Puerto Rico. For details contact **Dr. Agamemnon Gus Pantel, Conference Chair, U.S. Forest Service, Box 25000, Rio Piedras, Puerto Rico 00928-2500; telephone (809) 792-2458; fax (809) 792-7882.**

The International Association for Impact Assessment (IAIA) has scheduled its 25th International Symposium on "Remote Sensing and Global Environmental Change: Tools for Sustainable Development," for April 4-8, 1993, in Graz, Austria. For more information contact **ERIM/International Symposium, P.O. Box 134001, Ann Arbor, MI 48113-4001; fax (313) 994-5123.** More than 400 people from 45 countries registered for the IAIA August 1992 meeting in Washington, DC. A limited number of the 220-page *Conference Program, Abstracts and Invited Papers* document are available, for \$10.00 to cover the cost

of handling and postage, from the **International Association for Impact Assessment Executive Office, P.O. Box 70, Belhaven, NC 27810; telephone (919) 964-2338; fax (919) 964-2340.**

First Annual Newsletter

The International Council on Monuments and Sites, United States Committee (US/ICOMOS) specialized Committee on Earthen Architecture has produced its first annual newsletter covering current activities of North American professionals working in earthen architecture conservation. This was published as a special edition of the **US/ICOMOS Newsletter**, Number 7, 1992. For more information contact the **International Council on Monuments and Sites, United States Committee, Decatur House, 1600 H St., NW, Washington, DC 20006; telephone (202) 842-1866; fax (202) 842-1861.**

CRM in Jordan

A conference titled "Cultural Resources Management in Jordan: Techniques and Perspective" held in Jordan September 19-24, 1992, was co-sponsored by the American Center of Oriental Research (ACOR) and the Jordanian Department of Antiquities. Jordanian university faculty members and representatives of other governmental agencies participated, as well as foreign and local research organizations and preservation groups such as the Petra Trust and Friends of Archaeology. Funding was provided by the U.S. Information Agency.

A Jordan Antiquities Database and Information System has been developed. Thousands of archeological sites are being coded and entered into this computerized system under an ACOR/Department of Antiquities CRM project funded by the U.S. Agency for International Development. This is expected to enable Jordan to carry out an effective CRM program that can serve as a model for other countries throughout the region. For further information write **A.E. Rogge, Dames & Moore, 7500 North Dreamy Draw Drive, Suite 145, Phoenix, AZ 85020.**



Archeological Protection

Illegal Traffickers Sentenced

On July 9, 1992, Deborah J. Daniels, U. S. Attorney for the Southern District of Indiana, announced the sentencing of four men in connection with the looting of a Hopewell burial mound located on General Electric (GE) property near Mount Vernon, Indiana. All four men were sentenced on their pleas of guilty to violations of the Archaeological Resources Protection Act (ARPA).

On July 8, 1992, U.S. District Judge Gene F. Brooks sentenced Arthur J. Gerber to one year in prison, a fine of \$5,000.00, and forfeiture of the further sum of \$4,750.00 in lieu of his motor vehicles, which were used in looting the site. He also will be placed on supervised release for 3 years following his prison term. During this supervised release, Gerber will not be permitted to attend or promote archeological exhibitions at which artifacts are bought or sold, nor can he engage in artifact transactions unless needed to meet his obligations to pay the fines. Gerber pleaded guilty to five counts of ARPA violations.

The other three men sentenced for their parts in the ARPA violations were Danny Glover, John Towery, and John Way. Glover was sentenced, on a single felony ARPA count, to a period of 2 years probation, during which he must serve 6 months in a work release center. Towery was sentenced, on a single misdemeanor ARPA violation, to a term of 2 years probation, with 60 days to be served in a work release center. Lastly, Way received 2 years probation, 30 days in a work release center, and a fine of \$2,000.00, for a single misdemeanor ARPA count.

The particular crimes to which these four men pleaded guilty and were subsequently sentenced arose out of their participation, during the summer of 1988 through the spring of 1989, in the removal of Native American artifacts from a prehistoric Indian burial mound on GE property in violation of State law and Federal contracting provisions, and their subsequent interstate commercial trafficking of those arti-

facts. The mound is an 1,800-year-old burial and ceremonial site of the Hopewell culture, which contained literally thousands of artifacts made of silver, copper, wood, leather, flint, obsidian, mica, pearl, shell, bone, and drilled and inlaid bear teeth. This particular mound also contained burnt and unburnt human bones of at least three individuals, two of whom had apparently been buried there.

One of the principal deposits was first exposed by Way while operating his bulldozer in connection with a nearby Federally-sponsored highway construction project. Rather than notify authorities, as was required by law, Way removed hundreds of artifacts and transported them to his home in Illinois. Shortly thereafter, Way sold these artifacts to Gerber for \$6,000.00 in cash, and in addition agreed to lead Gerber back to the site. Upon locating the site, Gerber hired Glover and Towery to help him further loot the site while he took photographs and kept track of artifacts being removed. Some of the artifacts that were removed by these three men were later sold at the August, 1988, Owensboro, Kentucky, "Show of Shows." To date, the FBI has recovered nearly 3,000 artifacts looted from the burial mound, including copper and silver earspools, silver "panpipe" musical instruments, copper axe-heads, or "celts," pearls, beads and blades made of obsidian, flint, and clear quartz.

According to Dr. Mark F. Seeman, an archeologist and professor at Kent State University who studied the site in connection with the Federal investigation, "The GE mound was unquestionably an important site in southern Indiana. It is one of the five largest Middle Woodland mounds ever constructed in eastern North America." Seeman estimates that it took as many as 289,000 bushel basket-loads of earth from the Ohio River bottom, transported by hand, to construct this mound.

The ARPA Section 6(c) prohibits the interstate commercial trafficking of artifacts removed in violation of any State or local law. The removal of artifacts in this case violated Indiana State conversion and trespass laws, as well as vio-



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lation of a highway construction permit, which required notification of the discovery of any concentration of archeological resources. Gerber challenged the application of ARPA to the violations of the above laws, claiming that ARPA cannot be applied to artifacts removed from private land. Gerber will be permitted to appeal the District Court's rejection of this statutory challenge, and his guilty pleas are conditioned on the resolution of this issue by the Seventh Circuit United States Court of Appeals in Chicago. That decision is expected some time this fall. The sentences of the four men will be stayed until the appeal is resolved.

In response, U.S. Attorney Daniels stated that the "convictions obtained in this case, illustrate the Department of Justice's commitment to the protection of the rapidly dwindling and irreplaceable, cultural resources that sites like the GE Mound represent. I am heartened by the sentences handed down by Judge Brooks, which reflect the seriousness of these cases, and am confident that his reading of the ARPA statute will be upheld in the Court of Appeals."

Hikers Assist in ARPA Prosecution

Two Escalante, Utah, men who were photographed while digging for artifacts at 2,000-year-old Indian rock shelter

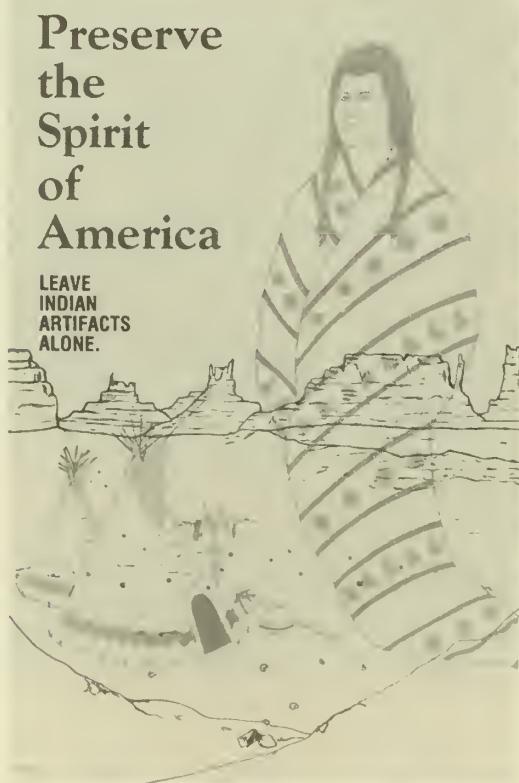
along Boulder Creek in Garfield County, UT, have pleaded guilty to felony charges of violating the Archaeological Resources Protection Act (ARPA). In announcing this first felony ARPA conviction in Utah, U.S. Attorney Dave Jordan noted that the case illustrates the significant damage being done by so-called hobby collectors. He added that his office will continue its get-tough policy to aggressively prosecute perpetrators of this crime, which is ravaging archeological sites on public lands.

Key evidence in the case against the two men was provided by six quick-thinking hikers who happened upon the crime scene while on a Memorial Day weekend backpacking trip in 1991. Seeing the two men digging with shovels and a hoe in a 3-foot deep pit, the hikers grew suspicious. A brief conversation followed during which the men revealed that they were hunting for archeological artifacts. The hikers then left, but not before secretly taking photographs, including one of the men digging and of registration stickers on the all-terrain vehicles (ATV) that the two men had used to get to the site. It was this evidence that allowed Bureau of Land Management (BLM) criminal investigators to track down the two men.

BLM criminal investigator Marty Phillips commended the courage and civic action of the hikers and stated that, "With hundreds of thousands of archeological sites spread across 22 million acres of public land in Utah, we need the public to be an extension of our eyes and ears and to help us stop the rip-off of the nation's heritage. Anyone with knowledge of theft or damage to historical or archeological resources should call the BLM's 1-800 Law Enforcement Hotline."

The two men could face a maximum penalty under ARPA of 2 years in prison and/or up to a \$250,000.00 fine. Sentencing for the two men before U.S. District Judge J. Thomas Greene is set for October 6, 1992. In addition, the two ATV's and the two pickup trucks used by the men to get to the site have been confiscated.

The BLM Law Enforcement Hotline number to report illegal activities on public lands is 1-800-722-3998. Individuals that provide information leading to a conviction are eligible for a reward under ARPA.



Three Men Sentenced for Looting in California

On the morning of September 7, 1991, Forest Service officers from the Cleveland National Forest spotted a Jeep in an

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area near two known archeological sites, which are both on the National Register of Historic Places. After following sounds of digging the officers came upon three men digging, one of them the owner of the Jeep. A search of the area yielded three 5-gallon buckets filled with hundreds of artifacts hidden in the brush along with a loaded .32 caliber Mauser pistol and .22 caliber rifle. In addition, the search uncovered more than 32 freshly dug pits dispersed throughout a quarter-mile area within the two archeological sites.

Searches conducted on September 17, 1991, in the homes of the three defendants yielded dozens of artifacts as well as 22 maps of National Parks and Indian reservations located all over southern California with archeological sites penciled in or highlighted. Ironically, in the home of one defendant a poster was uncovered that stated, "Our Heritage Is A Resource, Protect It! Call VANDALS, 1-800-VANDALS." In May, 1992, Forest Service agents acting on a tip conducted a search of a small shed down the street from the home of one of the defendants, who was known to frequent the shed. In the shed the agents found trash bags full of artifacts including arrow straighteners, painted pottery sherds, four labeled scrapers, more than 50 manos, and hundreds of pottery pieces.

The sentencing hearing for the three defendants was held on Monday, August 31, 1992. Each received 1 year probation, 100 hours of community service, \$1551.00 in restitution, \$500.00 fines, and a \$25 penalty assessment. In addition, each defendant must also submit a 10-page paper to the court on the local Indian Tribe, history, and context value of the artifacts within 6 months.

Cave Vandal Convicted

In the first test case of the new Kentucky Cave Protection Act, Terry Chaney was convicted on September 10, 1992, of illegally entering and vandalizing Savage Cave, a nationally significant archeological site near Adairville. The site, owned and managed by Murray State University, had been gated, locked, and posted prior to Chaney's activities.

Chaney, convicted of a Class A misdemeanor, received a probated jail sentence on the condition that he complete 5 days of community service. He was also fined \$100.00 and ordered to stay away from caves without proper legal authority or permission of the owner. State antiquity permits are required to enter or remove cultural objects from caves on State property such as Savage Cave, and it is illegal to dig

or have possession of any human bones without first being bonded or permitted through the Kentucky Coroner's Act.

Illinois Seminar on Crime Scene Investigation Held

The Illinois Department of Conservation and Illinois Historic Preservation Agency (IHPA) co-sponsored a 2-day seminar, in Springfield, Illinois, on how to treat illegal activities associated with archeological sites. At the invitation of Hal Hassen, Cultural Resource Coordinator for the Department of Conservation, and Tom Emerson, IHPA Chief Archaeologist, about 80 people, including 20 archeologists from around the State, site managers from many State parks and historic sites, and Conservation Police officers, attended the seminar.

Instructors included Dan Haas, Martin McAllister, and Woody Jones. Dan Haas, Forest Archeologist at the Shawnee National Forest, described some of the looting activities and prosecutions that have occurred

on Federal Forest Service land. McAllister, an archeologist experienced in both research and training in archeological protection nationwide, and Jones, a Senior Instructor at the Federal Law Enforcement Training Center (FLETC) in Glynnco, Georgia, and one who specializes in cultural resources protection, led the seminar. They focused on investigative methods at the scene of a crime and on assessing and reporting the damage that has occurred. An important benefit of this seminar, aside from its informational content, was the gathering of, and interaction between, police officers, site managers and archeologists on a subject that emphasizes team approach and inter-agency cooperation.



Promoting Archeology

Texas Archeology Awareness Week

Schools were active participants in the fourth annual Texas Archeological Awareness Week held April 11-17, 1992. Professional archeologists spoke before classroom audiences, acquainting students with archeological activities and uses for artifacts. Many schools scheduled special classes and activities that extended beyond the 1-week observance and included simulated digs on school grounds.



Join in Protecting Our Archeological and Historic Sites

April 11-17, 1992

The Council of Texas Archeologists and Texas Archeological Society sponsored exhibits, lectures, and other activities in all parts of the State, and the Office of State Archeologist distributed "Crossroads of the Past" posters urging every-

one to join in protecting archeological and historic sites in Texas. For details contact **Teddy Stickney, Archeology Awareness Week Project Committee, 201 West Solomon, Midland, TX 79705; telephone (312) 691-4462.**

California Celebration

Sponsors of California Archeology Week held May 11-17, 1992, included the National Park Service, Bureau of Land Management, and U.S. Forest Service along with other Federal and State agencies, professional organizations, universities, museums, private corporations, and local avocational groups. "Celebrating and Conserving California's Cultural Heritage" was the theme for the week, and an illustrated brochure and multithematic poster were produced by the Society for California Archeology. More than 125 exhibits, lectures, tours, symposia, open houses, and film shows were held in 36 counties. For more information contact **Christian Gerike, Society for California Archeology, 5411 Old Gulch Road, Mountain Ranch, CA 95246-9747; telephone (209) 754-4487.**

Focus on Amateurs

The Ohio Historic Society recently sponsored two archeology events for amateurs. Archaeology Day at Serpent Mound State Memorial in Adams County on September 6, 1992, emphasized cooperative efforts of amateur and professional archeologists in preserving and studying evidence of past cultures. Flintknapping was demonstrated and a Woodland Indian pottery workshop was held. Serpent mound is a 1,300-foot earthen embankment believed to have been built by prehistoric Adena Indians. An Artifact Identification Workshop was held September 12 in Warren County at the Fort Ancient State Memorial, a hilltop earthwork enclosure built by prehistoric Hopewell Indians. For further information write the **Superintendent, Hopewell Culture National Historical Park, 16062 State Route 104, Chillicothe, OH 45601.**

South Carolina Honors Its Past

An Archaeology Society of South Carolina Field Day at Indian Temple Mound was a highlight of South Carolina Archaeology Week September 19-26, 1992, organized by

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the South Carolina Institute of Archaeology and Anthropology (SCIAA) and the University of South Carolina. SCIAA and the Nautical Archaeology Society offered a dual certification field school for sport divers and non-divers.



An extensive calendar of events included museum tours and exhibits, film and lecture programs, craft demonstrations, special activities for children, and opportunities for the public to participate in actual archeological digs. The State's past, from Ice Age Paleoindian days through Colonial and Civil War times up to the present, was celebrated. Sponsors included the National Park Service and a number of other Federal and State agencies and private organizations. For more information contact Bruce E. Rippeteau, Archaeology Week Director, 1321 Pendleton St., Columbia, SC 29208; telephone (803) 734-0567.

Archeology Awareness in Illinois

Illinois Archaeology Awareness Week, September 20-26, 1992, began with a Fall Equinox Sunrise Observance at the Cahokia Mounds State Historic Site's Reconstructed Wood-

henge near Collinsville. Other events in the statewide celebration included talks, films, workshops, library displays, and tours of archeological sites, all with the theme of "Exploring New Cultures, A.D. 1673," focusing on the period during which French explorers first encountered Native Americans in this area. An Old Landmark Tavern Exhibit was sponsored by the Center for American Archeology in Kampsville, and the Illinois State Museum in Springfield and its Museum Society held an archeology laboratory analysis program and demonstrations of pottery making and flintknapping with tool making activities for children.

Other principal sponsors were the U.S. Forest Service, State Departments of Conservation and Transportation, Illinois Association for Advancement of Archaeology, Illinois Archeological Survey, and Illinois Historic Preservation Agency. For general information on this annual celebration contact Sharron K. Santure, Illinois State Museum, Spring and Edwards, Springfield, IL 62701; telephone (217) 782-0061.

Discovering New Worlds

The theme of the third annual Virginia Archaeology Week, "Discovering New Worlds Through Archaeology," reflected 1992 as the year of the Columbus Quincentennial. From October 3 through 12 exhibits, lectures, tours, hands-on participation in archeological excavations, and programs for children took place in all regions of the State. Special events included an Archeological Society of Virginia (ASV) Symposium and the second annual Intertribal Pow Wow of the United Indians of Virginia held at the Charles City Chickahominy Indian Tribal Center. Sponsors were the Virginia Department of Historic Resources (VDHR), Council of Virginia Archaeologists, ASV, and Preservation Alliance of Virginia.

Teachers were sent information packages for classroom use to involve students in elementary and middle schools, and copies of the new 64-page VDHR book, *First People: The Early Indians of Virginia* were sent to school libraries. Authors Keith T. Egloff and Deborah Woodward signed copies of *First People* at the Science Museum of Virginia in Richmond, and a poster advertising Virginia Archaeology Week (see page 33) was widely distributed. For celebration details contact the Virginia Department of Historic Resources, 221 Governor St., Richmond, VA 23219; telephone (804) 786-3143.

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NAGPRA

By C. Timothy McKeown

Seventh Committee Member Appointed

Secretary of the Interior Manuel Lujan, Jr., has announced the appointment of Dr. Jonathan Haas as the seventh member of the Native American Graves Protection and Repatriation Review Committee on August 4, 1992. Dr. Haas is Vice President for Collections and Research at the Field Museum of Natural History in Chicago. He joins Ms. Rachel Craig, Mr. Dan Monroe, Ms. Tessie Naranjo, Dr. Martin Sullivan, Mr. William Tallbull, and Dr. Phillip Walker as a member of the Committee. Secretary Lujan selected Dr. Haas from a list of nominees developed and consented to by all members of the Committee at their first meeting April 29-May 1, 1992.



The NAGPRA Review Committee: *Front row, left to right: Dr. Phillip Walker, Dr. Jonathan Haas; Back row, l to r: Ms. Rachel Craig, Ms. Tessie Naranjo, Mr. William Tallbull, Mr. Dan Monroe, Dr. Martin Sullivan*

Second Committee Meeting Convened

The Committee convened its second meeting August 26-28, 1992, in Denver, Colorado. Three major issues dominated the agenda: (1) review of the draft memorandum of written summaries, inventories, and notification; (2) election of a Chair; and (3) discussion of dispute resolution procedures.

Draft Memorandum Approved

At the Committee's request, a draft of the memorandum on written summaries, inventories, and notification was developed by the Archeological Assistance Division of the National Park Service (NPS) prior to the meeting. The Committee reviewed the draft in detail, refining language and procedures. Following review by NPS and Department of the Interior officials, the completed memorandum will be made available to Federal agency, museum, Indian Tribe, and Native Hawaiian organization officials.

Interim-Chair Elected

In light of the absence of Mr. Tallbull at the meeting, the Committee members in attendance decided to elected an Interim-Chair until such time as all members were present. Ms. Craig was unanimously selected as Interim-Chair



Ms. Rachel Craig

Dispute Considered

The Committee considered a request for intervention from Hui Malama I Na Kupuna 'O Hawai'i Nei, a Native Hawaiian organization, regarding four sets of human remains held by the P.A. Hearst Museum at the University of California, Berkeley. After reviewing documentation provided by Hui Malama I Na Kupuna 'O Hawai'i Nei, the Committee recommended that the parties:

- continue efforts to expediently repatriate the two sets of human remains for which agreement had been reached on a determination of Native Hawaiian cultural affiliation to the appropriate Native Hawaiian organization; and
- consider other approaches, such as physical anthropological examination of the human remains or convening a joint committee to clarify the cultural affiliation of the two remaining sets of human remains.

The two sets of remains identified as Native Hawaiian were repatriated to representatives of Hui Malama I Na Kupuna 'O Hawai'i Nei on September 11, 1992. Discussions related to the two remaining sets of remains are ongoing.

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Next Meeting Scheduled

The Committee scheduled its next meeting for October 8-10, 1992, in Fort Lauderdale, Florida. This meeting will focus on the review of draft regulations to implement the Native American Graves Protection and Repatriation Act (NAGPRA).

Inventories Completed

Letters of notification and listings of affiliated human remains and associated funerary objects were received from Joshua Tree National Monument in California and the R.S. Peabody Museum of Archaeology, Andover, Massachusetts. The letters of notification, which summarize the contents of the accompanying inventory in enough detail to help individuals or groups to identify cultural items to which they can reasonably be believed to be affiliated, were published in the *Federal Register* as required by Section 5 (d)(3) of the statute. A 30-day period following publication of each notice was allowed for any additional lineal descendants or affiliated Indian Tribes to contact the appropriate museum or Federal agency official regarding proper treatment and disposition of sensitive cultural items.

Campbell Collection Repatriated

Between July 1931 and July 1933 Elizabeth and William Campbell carried out archeological studies on lands now within Joshua Tree National Monument, near Twentynine Palms, California. Among the archeological resources collected were human cremations and artifacts believed to be associated with funerary practices of prehistoric and historic Native Americans. Recent assessment studies of the collection by NPS indicated basic similarities in crematory practice, ceramics, stone tool manufacture, ornamentation, and bone or shell artifacts with known archeological traditions ancestral to contemporary Cahuilla, Serrano, and Colorado Tribal peoples. After consulting with representatives of 14 Indian Tribes, the Native American remains and funerary objects in the Campbell collection were repatriated on June 13, 1992.

Additional Information

For additional information regarding NAGPRA contact Dr. C. Timothy McKeown, NAGPRA Program Leader, Archeological Assistance Division, National Park Service. P.O. Box 37127, Washington, DC 20013-7127; telephone (202) 343-4101.

Awards

SOPA Salutes Archaeological Conservancy

(*Taken from Society of Professional Archeologists SOPA Newsletter Vol. 16, No. 6, June-July 1992*)

The Society of Professional Archaeologists has presented its 1992 Seiberling Award, named in honor of Congressman John F. Seiberling for his strong legislative support of historic preservation, to the Archaeological Conservancy, which is the only organization in America dedicated solely to the acquisition and preservation of archeological resources nationwide.

A small group of preservationists established the Archeological Conservancy during the late 1970s in response to widespread disappearance of archeological resources resulting from vandalism and land development. The Conservancy acquired its first site, Powers Fort in Missouri, with a bank loan subsequently repaid by the organization's first fundraising effort. Three other archeological preserves were added during the same year. By the end of the decade Conservancy membership had reached nearly 6,000 and close to 70 sites in 11 states had been acquired.

Today, with 14,000 members, the Conservancy is credited with the conservation of more than 100 sites in 12 states. Many of these, including type sites of the cultures represented, have been transferred to National or State Parks for preservation and interpretation. The Conservancy permits problem oriented research at its sites. Any such investigation, however, must leave a significant portion of the site intact.

Preservation Action Awards

Connecticut Preservation Action, an organization of preservation advocates, celebrated the 25th anniversary of the National Historic Preservation Act of 1966 by recognizing 25 individuals and organizations that have played outstanding roles in preserving the State's cultural heritage. Three award winners have contributed significantly to Connecticut's archeological heritage.

Edmund K. Swigart is co-founder of the nonprofit American Indian Archaeological Institute in Washington, Con-

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necticut, which is dedicated to the discovery, preservation, and sharing of over 10,000 years of American Indian heritage. A prolific author and researcher, he also supports other organizations devoted to the cause of archeological resource preservation.

The Public Archaeology Survey Team, Inc. (PAST), is a nonprofit research organization that maintains a commitment to the identification and protection of Connecticut's archeological heritage. Its implementation of the Mashantucket Pequot Archaeology and Ethnohistory Project in Ledyard has been especially notable. University of Connecticut Assistant Professor of Anthropology Dr. Kevin McBride is founder and director of PAST. He and his assistant director, Mary Soulsby, serve as the entire staff of the organization.

The Mashantucket Pequot Tribal Council, under chairman Richard Hayward, has pursued vigorously the task of researching and documenting the Tribal history before and after the arrival of Europeans in what is now Connecticut. Following an intensive archeological investigation, the Mashantucket Pequot Reservation was listed on the National Register of Historic Places. The Tribe has formulated plans for construction of a museum and research center, and the reservation is currently being evaluated by the U.S. Department of the Interior for designation as a National Historic Landmark.

Archeologist, Historian Honored

The Arizona Archaeological and Historical Society's Byron S. Cummings Award for 1992 was presented to Gregory Franzwa for his archeological and ethnohistoric research into and preservation activities for the Santa Fe Trail. Franzwa spearheaded the designation of the Trail as a National Historic Landmark and has been a key figure in preserving archeological sites along the Trail. He was also responsible for implementation of grave preservation legislation associated with the Oregon Trail. He has been recognized by the National Geographic magazine as an authority on the Santa Fe Trail.

The Society's 1992 Victor R. Stoner Award was presented to Dr. Alexander J. Lindsay, Jr. for outstanding service to the Society and to the field of archeology in the Southwest since 1950. Among other contributions, he has been editor of *The Kiva*, has served on the Society's board of directors and many of its committees, and has presented slide-illustrated lectures. Lindsay has also been involved in developing policies and programs for other archeological organizations

including the Society for American Archaeology, Arizona Archaeological Society, and Arizona Archaeological Council. He presently acts as advisor to the editor of *The Kiva*.

Arizona Governor's Awards

(*Taken from Arizona Preservation News of Arizona State Parks, July 1992 edition*)

Tucson architect Eleazar Dias Herreras, the Archaeological Conservancy, a rehabilitation project, and a preservation commission have won the 1992 Arizona Governor's Awards for Historic Preservation, which are presented annually by the Office of the Governor, Arizona Preservation Foundation, and State Historic Preservation Office.

Herreras was one of the first Hispanic architects to be licensed in Arizona and a pioneer in the field of historic architecture. Starting in 1937, he directed restoration of the San Xavier Mission, Charles O. Brown House, Cordova House, Fish House, Stevens House, and Sosa-Carrillo House. Herreras was elected to the College of Fellows of the American Institute of Architects in 1973. As his death occurred prior to the awards ceremony, his award was accepted by his nephew, Mario Trujillo.

The Coronado Hotel/Apartments, built in 1928 in a Spanish Colonial Revival style, have been renovated into subsidized housing for low income and disabled residents of Tucson. The Downtown Development Corporation served as developer for this award winning project using funds contributed by the City of Tucson. The Coronado Hotel was listed on the National Register of Historic Places in 1982.

The Prescott Preservation Commission was honored for its efforts in publishing *Yesterday, Today, Tomorrow: A guide to Preserving Your Prescott Home*. More than 1,200 hours of volunteer work went into the publication of this source of information to help property owners appreciate and maintain unique pieces of Prescott's architectural heritage.

The Archaeological Conservancy, founded in 1979, is a national, nonprofit organization with more than 10,000 members that identifies, acquires, and preserves significant architectural sites in the United States. Arizona sites including McCreery, Oak Creek, Theony and Sugarloaf pueblos, Los Morteros Trincheras, Sears Point, and Mission Gueavi have benefitted from Conservancy work.

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PAWG

The Federal interagency archeology Public Awareness Working Group (PAWG) did not meet during the summer. It met in Washington, DC, on October 6, 1992, to review its accomplishments of the past several years, and to draft an action agenda for the next several. The *Archeological Resource Protection* text has been published, as have *Listing of Education in Archeological Programs 1990-1991* and the *Participate in Archeology* brochure. Archeological theme bookmarks have been published, and their reissue is on the future agenda along with a special issue of CRM focused on the Federal archeology program, a stamp, and a National Archeology Week. Other project suggestions will be welcomed.

PAWG does not mail out its relatively voluminous pre-meeting materials and minutes because of staffing and funding constraints. Individuals who are employees of participating Federal agencies can acquire these materials from their agency PAWG representatives, and members of PAWG cooperating associations can request the materials from the association representatives. Information about specific activities mentioned in this column can be provided in response to individual requests.

Federal Agencies

Advisory Council on Historic Preservation (Ron Anzalone, Valerie DeCarlo)
 Air Force (Paul Williams)
 Army (Constance Ramirez)
 Bureau of Indian Affairs (Don Sutherland)
 Bureau of Land Management (John Douglas)
 Bureau of Reclamation (Ed Friedman)
 Corps of Engineers (Paul Rubenstein)
 Council on Environmental Quality (Michelle Wiseman)
 Department of Energy (Lois Thompson)
 Department of Defense (Peter Boice)
 Department of Housing and Urban Development (Margaret Sweeney)
 Environmental Protection Agency (John Gerba)
 Federal Energy Regulatory Commission (Deborah M. Osborn, Edwin Slatter)
 Federal Highway Administration (Bruce Eberle)
 Fish and Wildlife Service (Kevin Kilcullen)
 Forest Service (Evan DeBloois)

Geological Survey (Norman Wingard)
 General Services Administration (Dale Lanzone)
 Marines (Marlo Acock)
 Minerals Management Service (Melanie Stright)
 National Aeronautics and Space Administration (Kenneth Kumor)
 National Endowment for the Humanities (David Wise)
 National Oceanic and Atmospheric Administration (Ervan Garrison)
 National Museum of the American Indian (Doug Evelyn)
 National Museum of Natural History (Bill Fitzhugh)
 National Park Service -- external programs: Archeological Assistance Division (Ruthann Knudson); internal programs: Anthropology Division (Doug Scovill)
 National Science Foundation (Noel Broaddbent, John Yellen)
 Navy (John Bernard Murphy)
 Office of Surface Mining (Suzanne Hudak)
 Resolution Trust Corporation (John Hansel)
 Soil Conservation Service (Michael Kaczor)
 Tennessee Valley Authority (Bennett Graham)
 U.S. Information Agency (Ann Guthrie Hingston)

Archeological Organizational Cooperators

American Anthropological Association (Margaret Overbey)
 American Anthropological Association, Archaeology Division (David Grove)
 American Quaternary Association (Vance Holliday)
 American Society for Conservation Archeology (Jim Judge)
 Archaeological Institute of America (Martha Joukowsky)
 Association of Transportation Archeologists (Jeanette Gaston)
 Committee for the National Institutes for the Environment (David Blockstein)
 Committee for Underwater Archaeology (Paul Johnston)
 National Association of State Archeologists (Robert Brooks)
 National Conference of State Historic Preservation Officers (Eric Hertfelder)
 National Trust for Historic Preservation (Kathleen Hunter)
 Preservation Action (Nellie Longsworth)
 Society for American Archaeology (Pru Rice; Council of Affiliated Societies: William Hohmann)
 Society for Commercial Archaeology (Rebecca Shiffer)
 Society for Historic Archaeology (Leland Ferguson)
 Society for Industrial Archaeology (Helena Wright)
 US/ICOMOS (Terry Morton)

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Notes

Historic Sites Protection Ruling Appealed

The recent U.S. District Court ruling in *National Trust for Historic Preservation v. Lujan* has been appealed. The court ruled that the Office of Surface Mining (OSM) regulations on the preservation of historic sites do not go far enough in meeting the goals of the Surface Mining Control and Reclamation Act and the National Historic Preservation Act (NHPA). This constitutes a setback for OSM and the coal industry as the court held that State permitting decisions are "Federally assisted undertakings" within the meaning of the NHPA and must comply with the provisions of that statute, which requires individual consideration of the impacts of any such permitting action on eligible historic sites. The ruling has been appealed and will come before the District Court of the District of Columbia on March 11, 1993. Also, a bill has been proposed in Congress that would amend NHPA to make the definition of "undertaking" clear.

NPF Awards 15 Grants

The National Park Foundation has announced 15 grant awards totaling \$189,600 in four program areas. Outreach and Education grants went to: Hopewell Furnace National Historic Site, Elverson, Pennsylvania, \$5000 for elementary education; Longfellow National Historic Site, Cambridge, Massachusetts, \$12,000 for a literacy program; Manhattan Sites, New York City, \$21,700 for a curriculum

outreach project; Roger Williams National Memorial, Providence, Rhode Island, \$5,000 to fund a teacher's handbook; Women's Rights National Historic Park, Seneca Falls, New York, \$5,000 for educational kits; Capitol Reef National Park, Torrey, Utah, \$16,700 for an education program; Mesa Verde National Park, Colorado, \$15,000 to produce visitor guides for educators; Andrew Johnson National Historic Site, Greenville, Tennessee, \$14,000 for education and outreach activities; Yosemite National Park, California, \$7,000 for a teacher intern program brochure; and Wildlife and Vegetation Division, National Park Service, Washington, D.C., \$10,000 to fund a Watchable Wildlife initiative.

Support for Volunteers grants were awarded to: Upper Delaware Scenic River, Narrowsburg, New York, \$3,250 for a recycling program; Great Smokey Mountains National Park, Tennessee, \$9,300 for its Adopt-A-Trail project; and Rincon Institute, Tucson, Arizona, \$20,000 for ecosystem education. The Idaho Cooperative Park Studies Unit received \$30,000 to create a pilot National Park visitor database, and the Cape Cod National Seashore, South Wellfleet, Massachusetts, got \$15,750 to fund a resource information kit for educators and group leaders.

NEH Offers Public Programs Grants

Through its Humanities Projects in Museums and Historical Organizations program, the National Endowment for the Humanities offers grants for projects designed to increase public understanding of the humanities. This program supports exhibitions, publications, and educational programs and materials. It also supports seminars, symposia, and other projects for museum staff to improve their

PAWG meets bimonthly, usually the first Tuesday of the month in Washington, DC. All group members and cooperators receive pre-meeting information and meeting minutes, and usually 15 to 20 people actually attend each meeting. The meetings are open to the public, but the Coordinator would appreciate being notified in advance of non-member attendees in order to adjust for meeting room size, if appropriate.

For further general PAWG information, contact Ruthann Knudson, PAWG Coordinator, Archeological Assistance Division, National Park Service, P.O. Box 37127, 20013-7127; telephone (202) 343-4119; fax (202) 523-1547.



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ability to present humanities programs to the public. For guidelines, application forms, and other information contact the **Humanities Projects in Museums and Historical Organizations, Division of Public Programs, Room 420, National Endowment for the Humanities, 1100 Pennsylvania Ave., NW, Washington, DC 20506; telephone (202) 606-8284.**

CAP Grants Announced

The 1992 Conservation Assessment Program (CAP) grants have been awarded to 159 institutions in 42 States, the District of Columbia, and Virgin Islands. These include several historical societies and historic sites, the Colorado Springs Western Museum of Mining and Industry, Melrose Plantation in Louisiana and El Rancho de las Golondrinas in New Mexico, Fremont Indian State Park in Utah, Chesapeake Beach Railway Museum in Maryland, and Boston's Old South Meeting house.

One-time CAP grants, funded by the Institute of Museum Service, finance conservation assessments of museums' collections, environmental conditions, and, where appropriate, historic structures. They are awarded on a non-competitive basis. For additional information contact the **National Institute for the Conservation of Cultural Property, 3299 K St., NW, Suite 403, Washington, DC 20007; telephone (202) 625-1495.**

ROW Guidelines Available

(*Taken from Arizona Preservation News of Arizona State Parks, July 1992*)

The Arizona State Historic Preservation Office has issued guidelines for dealing with long, linear right-of-way (ROW) projects such as roads, water lines, fiber optic lines, and overhead power lines. These guidelines were issued after comments were solicited from consultants and agency officials. They are designed to provide guidance in determining treatment of archeological resources to those planning long, linear projects. To request a copy of the ROW guidelines telephone the **Arizona State Historic Preservation Office at (602) 542-4174.**

Submarine Geoarcheological Study

The Marine Archeology and Maritime History Unit (MAMHU) of the National Oceanic and Atmospheric Administration (NOAA) has completed a second geoarcheo-

logical study of California's Channel Islands National Marine Sanctuary combining geophysical instrumental prospection for submarine terraces with coring studies of prehistoric land forms. MAMHU will use the data gathered to estimate the location of submerged prehistoric cultural sites. During a visit to Santa Cruz Island, accompanied by a Chumash Indian observer, the group photographed and documented a previously unknown midden site. One object discovered was a bone bearing a faded drawing of a shark, a naturalistic representation unusual in Chumash art.

In addition to studies at Channel Islands, MAMHU is evaluating potential historic cultural resource sites in the Florida Keys National Marine Sanctuary. Using NOAA's hydrographic survey capability, MAMHU divers study computer enhanced images of the sea floor to locate hidden shipwrecks and archeological sites.

Focusing primarily on National Marine Sanctuaries, marine archeologist Ervan Garrison and maritime historian Bruce Terrell conduct active archeological and historical research on the cultural resources of this country's coasts and oceans. Terrell is organizing the findings of these and other studies into a *Historic Context of the Marine Sanctuary Program*.

Sourcebook Published by DOJ

The General Litigation and Legal Advice Section of the Criminal Division of the Department of Justice published a two-volume *Archeological Resources Protection Federal Prosecution Sourcebook* in July 1992 in cooperation with the Departmental Consulting Archeologist/Archeological Assistance Division of the National Park Service. The first volume lists legislative and administrative materials including statutes, regulations, and legislative history matter. The second is devoted to case materials: pleading, legal memoranda and briefs, and judicial decisions.

This initial collection of source materials, printed in loose leaf form, is intended to assist in the preparation of criminal charges and forfeiture proceedings under the Archaeological Resources Protection Act of 1979 and criminal charges pursuant to Illegal Trafficking in Native American Human Remains and Cultural Items law. Copies of a first printing have been distributed. Those interested in additional information should contact Dick Waldbauer, **Departmental Consulting Archeologist/Archeological Assistance Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; telephone (202) 343-4101.**

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Publications

Resource Protection Guidebook Published

Archeological Resource Protection by Sherry Hutt, Elwood W. Jones, and Martin E. McAllister provides concise, easy-to-understand information on how to use the Archeological Resources Protection Act of 1979 to combat vandalizers and looters of archeological resources in the United States. Written by a judge, an archeologist, and a law enforcement officer, it is designed for use by professionals as well as concerned citizens.

The book is divided into six sections. The first gives an overview of the archeological resource protection problem in the United States. This is followed by a detailed discussion of criminal and civil prosecution provisions of the law. The remainder of the book is devoted to step-by-step discussion of the team process of investigating and prosecuting an archeological crime.

Copies of the 176-page paperback *Archeological Resource Protection* are available at \$19.95 each, ISBN 0-89133-199-9, from the **Preservation Press, Order Department, National Trust for Historic Preservation, 1785 Massachusetts Ave., NW, Washington, DC 20036**; telephone (202) 673-4066 or 800-766-6847.

Participate in Archeology

Full color photographs of archeological work in progress are an eye catching feature of a new *Participate in Archeology* brochure developed and designed by the Departmental Consulting Archeologist/Archeological Assistance Program of the National Park Service (NPS) in cooperation with the Public Awareness Working Group of senior Federal archeologists. Intended for distribution to the general public, this brochure explains the importance of archeological sites and details a variety of ways that members of the public can learn more about them and become active in their study and preservation.

Printing funds were contributed by NPS, the Bureau of Reclamation, Federal Highway Administration, Department of the Army, U. S. Forest Service, and Bureau of Land Management. All of these agencies will be distributing the brochure. To request copies of *Participate in Archeology*

contact Roger Friedman, National Park Service, Archeological Assistance Division, P.O. Box 37127, Washington, DC 20013-7127; telephone (202) 343-1881; fax (202) 523-1547.

Submerged Resources Articles

Three articles on the work of the Submerged Cultural Resources Unit (SCRU) of the National Park Service (NPS) have appeared in recent issues of popular magazines. Two of the articles were written by SCRU Chief Daniel J. Kenihan and the third by National Geographic senior writer John L. Eliot.

PARTICIPATE IN ARCHEOLOGY



Photo courtesy NPS Midwest Archeological Center.



**U.S. Department of the Interior
National Park Service
Cultural Resources**

Departmental Consulting Archeologist

Archeological Assistance

In "The Arizona Revisited," appearing in the November 1991 *Natural History* magazine, Lenihan describes an exploratory dive along the length of the sunken battleship at the *USS Arizona* Memorial in Pearl Harbor, Hawaii, working as a NPS archeologist with divers from the U.S. Navy's Mobile Diving and Salvage Unit (MDSU).

"Aleutian Affair," in the June 1992 *Natural History*, is his account of cold water dives made during an expedition to locate and document remains from World War II operations in Alaska's Aleutian Islands, made in cooperation with MDSU, the Fish and Wildlife Service, and the Air Force.

In "Nuclear Graveyard," published in the June 1982 *National Geographic* magazine, Eliot details the history of atomic tests carried out after World War II at Bikini Atoll in the Marshall Islands and recent SCRU study project dives made there with Lenihan as team leader. Tropical Bikini Lagoon and its ghostly fleet of submerged warship remains

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are being evaluated as a possible marine park to attract sport divers and help the people of Bikini return to their island. Bill Curtsinger's photographs accompany this article.

Free NPS Reports

New among National Park Service publications is *State Archaeological Education Programs*, presenting an overview of programs and experiences, both successes and failures, in educating the public about archeology. Included are papers from 13 Plains States, the Canadian Province of Saskatchewan, the Society for American Archaeology, and the Federal effort in archeological education.

Near-Surface High Resolution Geophysical Methods for Cultural Resource Management and Archaeological Investigations was written by Don H. Heimiller of Geo-Recovery Systems, Inc. This manual provides guidelines for geophysical surveying at archeological sites, acquaints those responsible for site investigations with applicable surveying techniques and equipment, and presents information in relationship to interpretational procedures, quality assurance, and reference materials. It gives a translation of techniques developed primarily for mineral exploration that are considered applicable to archeological investigations.

Both of these reports are free and may be requested from the **National Park Service, Division of National Preservation Programs, Interagency Archeological Services, P.O. Box 252878, Denver, CO 80225**.

Historic Places as Teaching Aids

Social Education, the official journal of the National Council for Social Studies, is currently featuring a series of lesson plans developed as a joint project of the National Park Service and the National Trust for Historic Preservation in their "Teaching with Historic Places" program. The series editor is Dr. Fay D. Metcalf. The first lesson, "Knife River: Early Village Life on the Plains," uses recently gathered archeological information in a study of Indian life in the upper Missouri River valley before the arrival of Europeans. It appears in the September 1992 *Social Education*, 56 (5).

These lesson plans will allow teachers and students in the middle grades to use historic places to gather facts and develop concepts through observation, investigation, analysis, and interpretation so that students learn skills in using knowledge that will be relevant to many disciplines. In addition to the short lesson plan series, this program will

produce educational kits for longer teaching units and a professional development curriculum for teachers on how to prepare instructional activities and materials using historic places in their own areas. For further information contact the **National Council For Social Studies Headquarters Office, 3501 Newark St., NW, Washington, DC 20016; telephone (202) 966-7840**.

CPS Collections Classification

The nomenclature of the Canadian Parks Service (CPS) classification system makes it possible to categorize all of the artifacts in historical collections on the basis of a thesaurus of more than 6,000 key words. Developed by the CPS Collections Management Group, the system uses as its basic reference the classification system developed by R.G. Chennall. A 265-page reference edition of *Canadian Park Service Classification System for Historical Collections* includes an explanation of the system, definitions of categories, classes and subclasses, the thesaurus, and a bibliography. It has been issued in French under the title, *Système de classification des collections historiques du Service canadien des parcs*. Copies are available from the **Canada Communications Group — Publishing, Ottawa, ON, K1A 0S9, Canada**.

Maryland Publications

Maryland's earliest history and prehistory are the subjects of an archeological study, *Myrtle Point: Changing Land and People of a Lower Patuxent River Community*, recently issued by Maryland Historical and Cultural Publications.

This 220-page publication gives a detailed review of the plants and animals of the changing Patuxent River estuary and suggests how their resources and land forms affected Native American hunter-gatherers. In treating early European colonization of the area, authors Stuart A. Reeve, Jean B. Russo, Dennis J. Pogue, and Joseph M. Herbert focus on the career of Nicholas Harvey, the founder of St. Josephs Manor, and the developing social dynamics of colonial Harveytown.

Copies of *Myrtle Point: Changing Land and People of a Lower Patuxent River Community* cost \$18.00 each, with \$4.50 postage and handling. *Making Dead Oyster Talk* is available at \$12.95 a copy plus \$3.50 postage and handling. Both publications can be ordered from **Maryland Historical and Cultural Publications/DHCD, Department of Finance, Central Cashier, P.O. Box 500, Crownsville, MD 21032-0500**.

Conferences

1993 Illinois Historic Archeological Conference

The Illinois Historic Archaeological Conference will be held jointly with the Ohio Valley Archaeological Conference in March 1993 in Carbondale, Illinois. The U.S. Forest Service/Shawnee Forest will co-sponsor the meeting with the Illinois Historic Preservation Agency. The theme of the conference will be "The Use of Heritage Resources in the Reconstruction of Past Environments." Those who are interested in presenting a paper or would like more information about the Conference should contact Mary McCorie, Assistant Forest Archaeologist, Shawnee National Forest, 901 S. Commercial, Harrisburg, IL 62946.

Joint AIC-APT Conference

The American Institute for Conservation of Historic and Artistic Works and Association for Preservation Technology International plan to hold a joint Collections in Historic Buildings Conference on June 1-5, 1993 in Denver, Colorado. More than 1,000 site managers, curators, conservators, architects, and engineers from around the world are expected to consider a variety of perspectives and share their experiences on how to balance the preservation needs of collections and the historic buildings that house them. For further information contact the American Institute for Conservation of Historic and Artistic Works, 1400 16th St., NW, Suite 340, Washington, DC 20036; telephone (202) 232-6636; fax (202) 232-6630.

49th NCAI Conference

The National Congress of American Indians (NCAI), the nation's oldest Indian Tribal advocacy organization, held its 49th Annual Convention October 11-16, 1992, in Arlington, Virginia. NCAI President Gaiashkibos announced that 1992 has been designated, by Presidential Proclamation, the Year of the Indian.

The Convention theme, "Honoring Our Youth, Our Families, Our Religion," was addressed in a number of ways beginning with "Native Voices on the Mall" October 11 on the West Lawn of the U.S. Capitol in the District of Columbia. Hawaii's Senator Daniel K. Inouye was co-sponsor of this showcase of American Indian leaders with interactive

forums on major issues, children dancing in Native American dress, and Honor Songs.

Other highlights of the NCAI Convention were a reception honoring American Indian veterans, a Native Youth Symposium, a Women's Luncheon, and an Elder Wisdom Circle. Donald Rojas, President of the World Council of Indigenous People, addressed the convention on international issues, and other international leaders discussed Tribal participation with indigenous groups around the world. For additional information contact Michael Anderson, National Congress of American Indians, 900 Pennsylvania Ave., SE, Washington, DC 20003; telephone (202) 546-9404.

Keepers of the Treasures

The Confederated Salish and Kootenai Tribes of the Flathead Nation were hosts for the annual Cultural and Historic Preservation Conference for Indian Tribes, Alaska Natives, and Native Hawaiians October 20-24, 1992, with the Keepers of the Treasures organization, and the National Park Service. The Conference, featuring a workshop on "How to Write Historic Preservation Fund Grant Proposals," was held at the KwaTaqNuk Convention Center/Resort in Polson, Montana. The Keepers of the Treasures -- Cultural Council of American Indians, Alaska Natives, and Native Hawaiians held their second membership meeting on October 23-24. For more information contact Emogene Bevitt, National Park Service, Interagency Resources Division, P.O. Box 37127, Washington, DC 20013-7127; telephone (202) 343-9561.

EEI Public Participation Task Force

The Edison Electric Institute Public Participation Task Force Annual Fall Business Meeting and Workshop was held October 22-23, 1992, with a Task Force Meeting October 22, in San Francisco, California. The workshop theme was "Understanding and Valuing Cultural Diversity in Public Involvement Programs -- Conflict or Consensus?" For details contact Lu Lynn de Silva, Pacific Gas & Electric Company, 123 Mission St., Room H2041, San Francisco, CA 94106; telephone (415) 973-5770, fax (415) 973-7971.

Annual Illinois Meeting

(from Illinois Association for Advancement of Archaeology Illinois Antiquity, September 1992)

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The annual meeting of the Illinois Archaeological Survey was held **November 6-7, 1992**, at the **Research and Collection Center of the Illinois State Museum in Springfield**. Dr. George Milner of Pennsylvania State University spoke on "The Impact of Europeans on Native Americans in the 16th and 17th Centuries in the Southeastern United States." For further information contact **Charlotte Montgomery, Illinois State Museum Society, Corner Spring and Edward Streets, Springfield, IL 62706**.

50th Plains Conference

The **50th Plains Anthropological Conference**, a premier regional gathering of archeologists and anthropologists, was held **November 11-14, 1992**, at the **Ramada Hotel and Convention Center in Lincoln, Nebraska**. Hosts were the Midwest Archeological Center of the National Park Service, Nebraska State Historical Society, and University of Nebraska Department of Anthropology.

Inspired by the 1927 Pecos Conference, a meeting of archeologists interested in southwestern prehistory, 18 people, mostly professional and avocational archeologists, met on the Vermillion campus of the University of South Dakota August 31-September 1, 1931, for the first Plains Conference. Four such gatherings were held before World War II. The Plains Conference was resumed in 1947, being held each Fall in Lincoln until 1959 because that was the home of the Smithsonian Institution's River Basin Surveys Missouri Basin Project and the University of Nebraska Laboratory of Anthropology, two organizations active in early reservoir salvage research in the area. Now the Conference is usually hosted by a different institution at a different location each year.

A formal publication series designed to disseminate the results of research conducted in the Plains regions originated as the *Plains Archeological Conference Newsletter* in 1947. Its title was changed in 1954 to *Plains Anthropologist*. Since 1961 it has been issued as a quarterly, usually supplemented by an annual monographic or thematic *Memoir* issue. The Plains Anthropological Society was formed to guide both the yearly meetings and the journal.

A special feature of the 50th Plains Conference was a plenary session during which senior archeologists and anthropologists offered their perspectives on the growth and development of research in the Plains region. For further details contact F.A. Calabrese, Plains Conference Co-Chair,

Midwest Archeological Center, Federal Building, Room 474, 100 Centennial Mall North, Lincoln, NE 68505-3873.

AAD Sponsors Conference Discussion

The Archeological Assistance Division (AAD) of the National Park Service coordinated a panel discussion for the 1992 North American Social Studies Conference, the National Council for the Social Studies 72nd annual meeting held in Detroit, Michigan, November 20-23, 1992, in conjunction with the Canadian Association for the Social Studies. Speakers from AAD, the Bureau of Land Management, National Register of Historic Places, Museum of Florida History, Toronto Board of Education, Crow Canyon Archaeological Center, Smithsonian Institution, and Louisiana State University College of Education introduced teachers to a wide array of resources available to aid in incorporating archeological information and analytical approaches into school curricula. The AAD session was titled "Using Archeological Tools to Teach Cultural Heritage." For Conference information contact the National Council for the Social Studies, 3501 Newark St., NW, Washington, DC 20016; telephone (202) 966-7840.



Passport in Time

Editor's Note: Lawrence F. Karr is a Washington, DC, computer consultant specializing in cultural resource management. His wife, Kathleen Karr, writes historical novels. His daughter, Suzanne, is in the eighth grade at the Maret School. Son Daniel is a fourth-grader at St. Patrick's Episcopal Day School. The Karr family spent a week in Montana during the 1992 summer archeological field-work season working as volunteers in the Passport in Time (PIT) program of the U.S. Forest Service in the Kootenai National Forest. For further information on PIT programs, contact the Passport in Time Clearinghouse, CEHP Incorporated, P.O. Box, 18364, Washington, DC 20036; telephone (202) 293-0922.

A View From the PIT

By Suzanne Karr

The gold mining town of Sylvanite, Montana, has had its share of chaotic destruction: the original town, established in the 1890s was demolished by a fire in 1910. The only building the miners worked to save was the hotel/saloon, where the town's booze was kept. Several tries to reactivate the area's closed mines failed in the 1930s. Finally, in 1991, a forest fire wiped out most of the remaining buildings, but also cleared the forest that had covered many archeological sites that no one knew existed. The purpose of our Passport In Time (PIT) archeological dig in the Kootenai National Forest was to begin to develop basic information on Sylvanite and its residents that did not exist in written accounts and oral histories.

When we started digging, I wanted gold to be unearthed near the ruins of the old stamp mill. The staff working with us were reluctant to divulge their knowledge on the subject. One whispered, "If there is any, it's all mine!"

My interest switched. I wanted to find a modest cache of jewelry left buried from the 1910 fire. Unfortunately, the boarding house site I worked on had not had such wealthy boarders. At last what I yearned to gain was knowledge of how the town existed, knowledge from my point of view. I wanted the diary of a girl my age who lived in Sylvanite. This discovery would enable a more correct picture of life

in the mining town to be pieced together, along with the help of the few extant photographs of the town.

During the actual digging, I found pieces of a broken glass bottle and hundreds of nails. In a root cellar portion I found the handle of a metal bucket, which might have contained food. Others found signs of a female resident: a lady's lapel pen/pendant and a piece of early eyeglass. Nothing found seemed reminiscent of the girl.



Working as a PIT volunteer, Suzanne Karr, 13, processes artifacts in the laboratory at the Kootenai National Forest.

However, the root cellar site had only been dug down to the 1890s level when my week was over and I had to leave it for others to finish. I had made my way past all the burnt, broken boards and debris and felt something was there, under the next frail layer of soil. It practically screamed to share itself with the world, but I was powerless to help, my authority gone with the trowel. Unlike methods of getting rich quick—an archeologist only has a shot at fame—archeology leaves you with a sense of respect for the land and its earlier occupants.

I had a wonderful time on the dig and I realized my urge to explore a perspective and a lifestyle different from my own, untouched since previous times, and to understand it. I didn't find the metal box containing the girl's diary but it's there in the Kootenai Forest, waiting desperately to be unearthed. Someday, I may return to find it. Archaeology has made its mark on my life.

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An Alternate View

By Lawrence F. Karr

I've met a number of archeologists in my time, and have often wondered how they got that way. Participating with my family in a real archeological dig this summer has helped me to understand them much better.

Our group of Passport In Time (PIT) volunteers was provided classroom training in archeology and in handling the local black and grizzly bears. Field training was conducted at several different field sites and at the infamous local watering hole, the Golden Nugget. The Golden Nugget turned out to be a focal point for meeting the local residents. For example, one denizen, on hearing about our project, promptly produced a projectile point for identification and dating. After the three archeologists present confirmed its history, he offered to return a collection of artifacts removed from a site 40 years ago, about which he was feeling guilty!

Maintaining good relations with the local residents is important in an area such as the Kootenai, where, for example, the oldest standing structure dates from the early 1800s and is on private land. The dig was advertised in the local newspapers and appropriate signs inviting visitors were posted. Three to 10 visitors turned up each day, all local, who were all very interested in the goings-on and in talking to the archeologists.

Supervision was intense. Besides the staff coordinating and managing the dig, office-based archeologists from the Forest Service were rotated through the dig for several days each, providing volunteers with the opportunity to meet, talk, and work with over a dozen professionals. All the "guest" archeologists were delighted to bring their own personal dig kits and "come to ground," as it were.

Coming to earth for the volunteers meant dealing with the usual dirt, dust, and rocks, as well as wood ash from old fires and volcanic ash deposits from Mount St. Helens, both specific to this area. We also learned a fundamental truth for a dig: when excavation material is being screened the wind always shifts to blow the dust back into the unit



it came from, and always at the head level of those working in that unit. Of course, the only antidote was the Golden Nugget.

Hands on training included time working in the lab with the processes of sorting, cleaning, bagging, identification, and numbering; that is, converting the original "junk" to "things" to "objects" and finally into "artifacts." The importance of proper and extensive documentation was stressed, particularly as it relates to subsequent analysis and inference.

For example, finding perfume bottles at a given site implies the presence of women, but also finding children's toys has implications as to what kind of house it might have been.

Finally, this experience strengthened and confirmed my archeologist stereotype: bright, interesting people, filled with enthusiasm and love for their work, who can maintain their cheerful outlook even under multiple layers of dirt.



Daniel Karr, 9, works at the Sylvanite town site carefully screening dirt excavated by other PIT volunteers in hopes of discovering small artifacts (Photos by Kathleen Karr).

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